

LogPlot™ User Manual

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Welcome

Welcome to LogPlot 7! LogPlot 7 is the newest version of the log plotting software published by RockWare, Inc. It reads user-created or imported data files that contain downhole descriptive, quantitative, and other data, and plots these data as graphic strip logs. The format or “blueprint” of the logs (the components and their locations) is designed within the Log Designer, included with LogPlot 7. LogPlot has been used in the environmental, geotechnical, mining, and petroleum industries since 1983.

Getting started with this program involves the following steps – refer to the indicated chapters for more information.

! Note that this manual is a subset of the more complete online help available in the program’s **Help** menu.

Main Topics:



Running the tutorial: These acquaint you with the program, and lead you through the design, data, compile, and viewing steps. The tutorial is available in the online help messages only (using the **Help / Tutorial** menu option).



Designing your log: Using the built-in Log Designer you can modify our library of designs or create new ones from scratch. See Chapter 2, page 21.



Entering your data: Mini-spreadsheets handle all the different types of data LogPlot can process. See Chapter 3, page 135.



Compiling the data: Establish a few program settings and click a button to plot the data into the design! See Chapter 4, page 223.



Viewing your log: View the log on the screen, print it, export it. See Chapter 5, page 231.

Additional topics:

Other LogPlot tools: Keyword, pattern, and symbol libraries. See Chapter 6 page 251.

ReportWorks: A built-in page layout program for logs, images, text, etc. See Chapter 7, page 261.

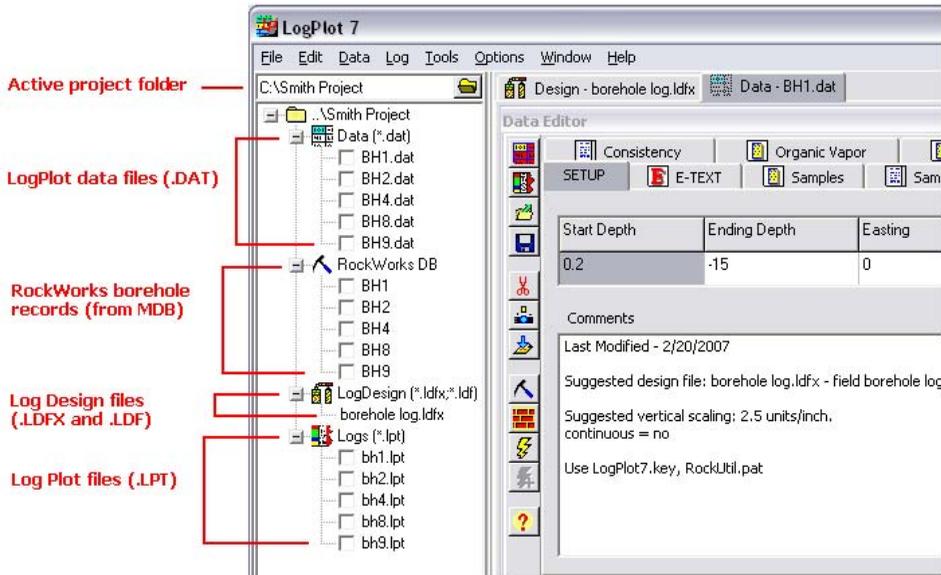
Reference: Trouble-shooting, sample logs, other miscellaneous information. See Chapter 8, page 275.

If you have upgraded from LogPlot2005

If you have upgraded to LogPlot7 from LogPlot2005, here are some things you should know:

Window / menu modifications:

There is a new File Manager pane along the left edge of the program window. You can quickly and easily open data, design, and plot files by double-clicking, or open several data / plot files at once using check-boxes.

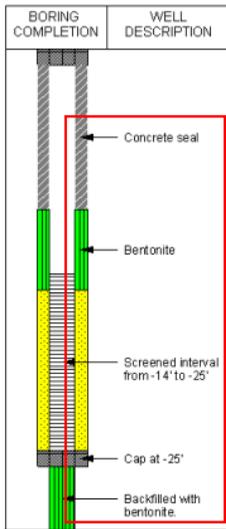


The File Manager will also provides direct access to RockWorks MDB data - display, open, and compile any RockWorks MDB borehole data - no "import" necessary.

The Log Design file format has changed to XML-style, with a new extension: .LDFX. LogPlot will still read older-format .LDF files, and you can re-save in the new format.

New & modified entities:

Well Construction columns now have automatic caption labels with lines or arrows.

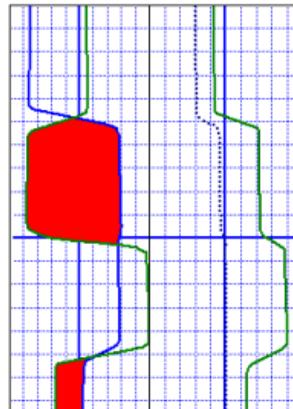


Well Column

Top	Base	Outer Diam.	Inner Diam.	Material	Offset	Caption
0	-1	3.0	0.0	cap		
-14	-25	3.0	0.0	screen		Screened interval from -14' to -25'
-25	-26	3.0	0.0	cap		
-26	-30	3.0	0.0	bentonite		Backfilled with bentonite.
0	-1	6.0	3.0	cap		
-1	-10	6.0	3.0	cement		Concrete seal
-10	-15	6.0	3.0	bentonite		Bentonite
-15	-25	6.0	3.0	sand pack		
-25	-26	6.0	3.0	cap		Cap at -25'

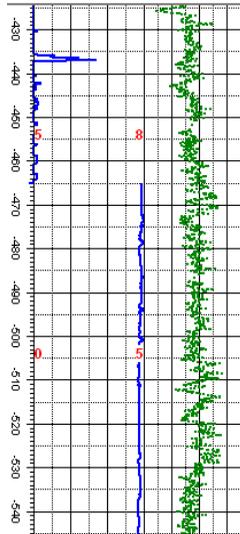
Curve, Bar Graph, and Cross Plot Curve columns can be set to be scaled automatically based on the data range. Any linked header/footer legends will be updated accordingly. This is handy for imported data, such as from LAS files.

Neutron LS			Photoelectric		
45.0	NPHI	-15.0	0.0	PEF	10.0
-----			-----		
Sonic					
2.0	RHOB	3.0	140.0	DT	40.0
-----			-----		



Introduction

Curve columns can be linked to a user-defined scale table, whereby specific depth range(s) can have a different minimum-maximum (left-right or right-left) scale.

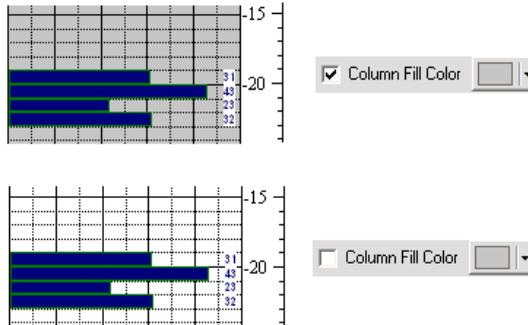


Enter comments into Lithology Descriptions, for placement at a specific depth, simply by leaving the base depth blank.

Top	Base	Lithology	Contact	Description (up to 2000 Character
0	-1	TOPSOIL		
-1	-5.4	SANDY SILT		Tan, loose and damp.
-2.2				HNU=12ppm
-4				Gasoline odor
-5.4	-7.5	CLAY AND SILT		Dark green-brown, phyllitic, wet.
-7.5	-10	SAND		White, poorly cemented, wet.

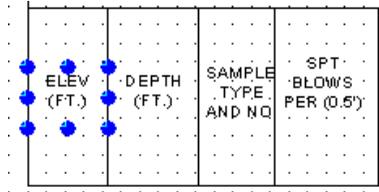
Base depth & keyword are left blank. Description text is plotted below defined Top depth.

Background fill is available for Bar Graph columns.



Edit and Static text offer left, center, right, top, and bottom alignment, with transparent or opaque backgrounds.

Log Design entities have resize handles on all sides.



New tools:

Undo added to the Log Design window.

The LAS import tool offers resampling of the curve data. Handy if the LAS file resolution is 0.02 feet and you only need downhole measurements every foot.

The Excel import tool can import data for more than one borehole from a single XLS file.

Raster exports (TIFF, PNG, etc.) of the entire log as a single page. Very handy if you need to import a raster image into another software program or print to a long PDF.

Compile multiple data files at once, using the File Manager check-boxes and the right-click Compile Selected Files option.

Import RockWorks lithology and stratigraphy types directly from the MDB database.

Keyword editor accepts mixed-case entries (previously stored all-caps only).

If you have upgraded from LogPlot2003, LogPlot2001, or LogPlot98, please refer to the Help messages for additional information.

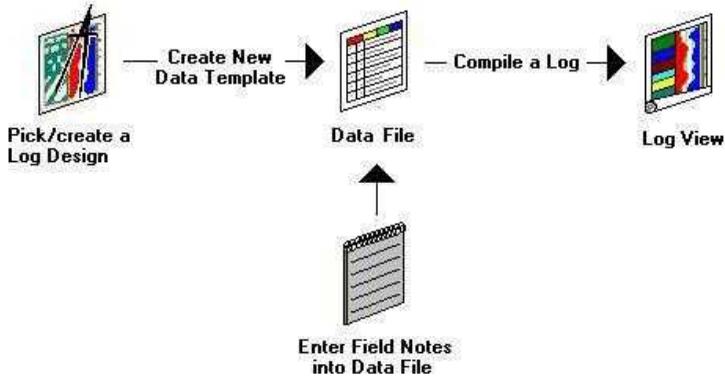
Where Do I Start?

The sequence of steps to take in using LogPlot depends a lot on what kind of data you have and what kind of log you are creating. LogPlot is used in a variety of industries, to display shallow soil borings, monitoring wells, hard rock drill holes, geophysical logs, mud/gas logs, and many more.

Introduction

Here we list some sample workflows for LogPlot.

Workflow 1: Choose a log design / enter your data / compile your log.

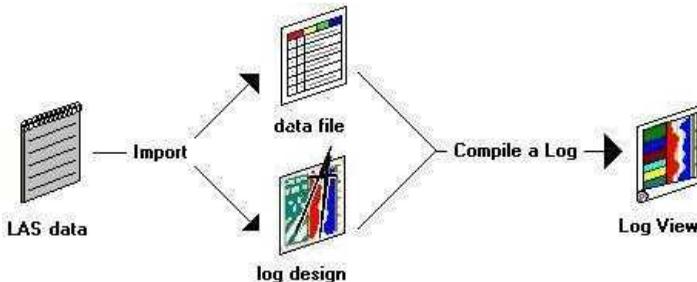


Use this workflow for environmental logs, geotechnical logs, most mudlogs and mining logs.

Where you can get more information:

- A few tutorial lessons: Compile a tutorial data set, and Modify an existing log. Access the tutorials through the **Help / Contents / Tutorial** menu.
- Sample Log Designs and Data Files (pick one that looks like your company's log layout). See page 292.
- Where do I Start Designing? See page 23
- Automatic Data File Tools (create/update your data templates automatically). See page 191.
- Compiling Logs – page 223.
- Viewing Your Log – page 231.

Workflow 2: Import LAS data / create a log design / compile your log.



Use this workflow for generating geophysical logs from existing LAS files.

Where you can get more information:

- A tutorial lesson: Importing LAS Data. Access the tutorials through the **Help / Contents / Tutorial** menu.
- Importing LAS Data (page 209)
- Compiling Logs (page 223).
- Viewing Your Log (page 231).

System Requirements

LogPlot 7 will run under the minimum system setup listed below, with recommended operating parameters shown in parentheses.

- Windows 98/ME/NT/2000/XP/Vista (2000, XP, or Vista recommended)
- Pentium or faster processor
- 128 MB RAM or more
- 10 MB free disk space
- Supports all Windows compatible printers and plotters

Installing LogPlot

To install the LogPlot 7 program, you must follow these steps:

1. Start up Windows, if you haven't already.
2. To avoid possible conflicts, exit any other Windows applications that may be running.
3. Follow the instructions shown below to launch the installation program from a CD-ROM or from an internet download:

CD-ROM

Insert the RockWare-supplied CD-ROM into the CD-ROM drive of your computer.

On many systems, the installation program will start automatically. If it does not, select the **Run** command from the Windows **Start** menu. Type the following in the displayed dialog box: `x:\SetupCD` and choose **OK**, where "x" is the letter of the drive that contains the CD-ROM.

the CD menu program will display a variety of different programs that you can install as demos or "trialware" in addition to LogPlot. For now, however, simply select LogPlot 7 from the menu along the left. You should see a description about the program in the pane to the right. Click the **Install Software** button in that pane to start the installation.

Downloaded from the Internet

LogPlot can be downloaded from RockWare's web site (www.rockware.com) by selecting the "Download" item on the home page, filling in the requested information, selecting the LogPlot 7 program, and following the remaining instructions. In fact, we recommend that registered owners download an updated program from time to time, to take advantages of new features and fixes we implement on a regular basis.

Save the downloadable LogPlot installation file to your Desktop or to your c:\temp folder

Introduction

In Windows Explorer or My Computer, double-click on this file to start the installation.

4. Follow the recommended installation settings unless you specifically need to install the program in a different folder. To proceed to the next screen at each installation step, click on the Next button. To cancel the installation entirely, click Cancel.
5. When the installation is complete, the licensing program will start up automatically. Refer to Licensing LogPlot for information about how to set up the licensing.

! In Windows Vista, the person installing the software must have Administrator privileges.

Upgrading from another version of LogPlot? LogPlot 7 will be installed in a new folder on your hard drive ("Program Files\RockWare\LogPlot 7") to eliminate overwriting of your earlier files. Its accessory files will be installed in "My Documents\LogPlot 7\System" (system files) and "My Documents\LogPlot 7\Samples" (sample DAT and LDFX files).

If you want to use any of the following user-modifiable files from an earlier version of the program, you will need to copy them to the new LogPlot 7 folders:

The "logplot.key" file that contains your LogPlot keywords. (LogPlot98 or older: you'll need to IMPORT these keywords into the keyword editor.) You can copy this to your working data folder, or to My Documents\LogPlot 7\System.

The "rockutil.pat," "rockutil.sym," and "rockutil.rsf" files that contain patterns and symbols that you can customize using the Pattern and Symbol Editor programs. You can copy this to your working data folder, or to My Documents\LogPlot 7\System.

LogPlot data files (.dat). Since files are not backward-compatible, you should work with copies of your old data files in the new version of the program.

Any Log Design Files (.ldf) that you created within the Log Designer. Since files are not backward-compatible, you should work with copies of your old log design files in the new version of the program. In LogPlot 7, the file format has changed, and the files are now stored as ".LDFX" files.

! LogPlot permits you to maintain multiple versions of the keyword, symbol, and pattern files. See Setting Up Program Files (page 285).

Licensing LogPlot

After running the installation program, the next step is to license the software.

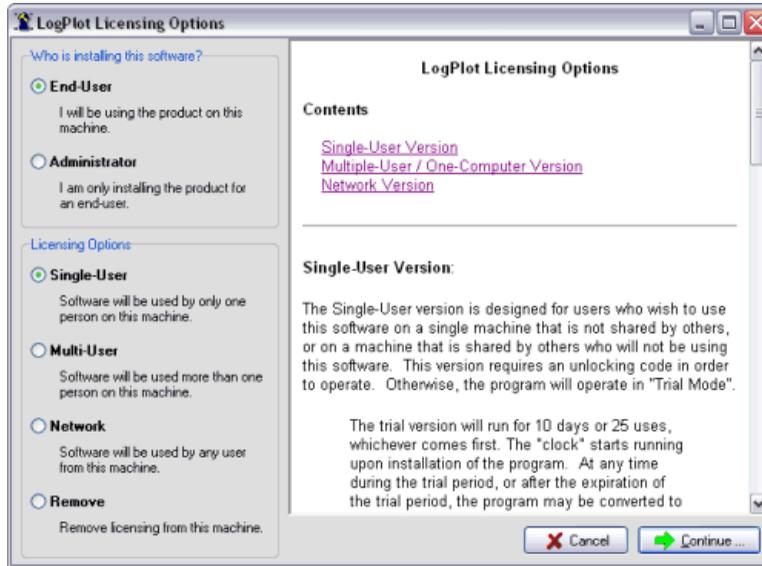
The License Agreement

The first screen you'll see is a display of the license agreement. Please read this. It's important that you understand the terms of the license.

1. If you accept the terms of the license agreement, click in the "I accept the terms of this agreement" box, and continue on to the next step.
2. If you do not accept the terms of the license agreement, click the Cancel button. The program will not launch. Contact RockWare for details.

Choosing Your License Type

Next, you'll probably see a screen similar to this:



1. First, you need to specify who you are: click in the **End User** button if you will be using the software. Click in the **Administrator** button if you are installing the software for someone else. This makes a difference in the licensing process:

You must be the End User to unlock a Single User license.

You must be an Administrator or an End User with standard user or higher privileges (e.g. administrator) to unlock the Multi-User license or to set up the Network license.

2. Now, select the type of license you have purchased. There's more information about the license types displayed in the right pane of the program window.

Single User: If you purchased a Single User license, click that button. With this license type, LogPlot is licensed to be used by a single designated person. You should purchase this license type if you will be the only user of the program. Running in this mode requires an "unlocking code" that is supplied by RockWare. If you purchased a Single User license, your registration number (on a sticker on your CD or user manual) will contain the letters CS or AS or S. If you are waiting to receive your unlocking code, can run the program in "Trialware" mode (see below).

! If you are an Administrator (installing the program for another person), you will need to cancel the licensing at this time and have the actual user log into the computer. The Single User licensing information is stored under the Current User registry. The actual user can rejoin this licensing sequence by starting up the LogPlot 7 application after they've logged into Windows.

Multi-User: Use this mode if you have purchased a Multiple-Users / One Computer license for the program. With this license type, LogPlot can be installed onto a single computer and used by multiple people on that computer, one at a time, locally (not via a network). You should purchase this license type if more than one person will need to access the program on the computer, such as in an academic lab where multiple students will need to use the software. If you purchased a Multiple-User / Single Computer license, your registration number, on a sticker on your CD or user manual, will contain the letters CM or AM. Running in this mode requires an "unlocking code" that is supplied by RockWare.

Network: Click in this button if you have purchased a network license for the program, which allows more than one person to access the program at the same time. If you purchased a Network license, your registration number, on a sticker on your CD or user manual, will contain the letters CN or AN. The network version requires a special network license certificate file, which RockWare will email to you. This file must be stored on the server in a location to which all users have access.

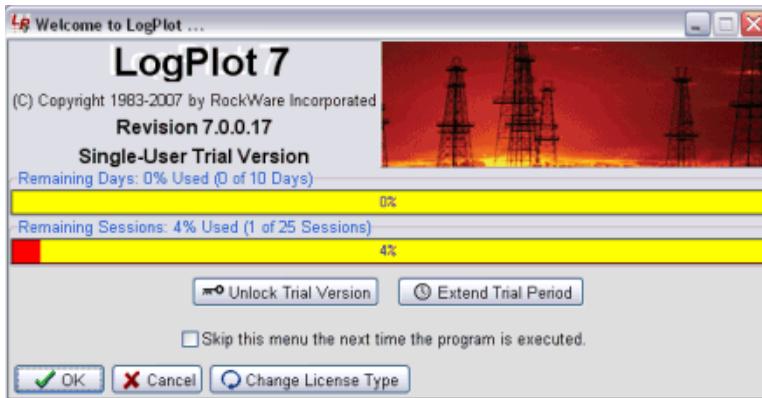
Trialware: If you haven't purchased a license yet and wish to run in "Trialware" mode, choose Single User. In Trialware mode all program functionality is intact except some of the export tools are disabled. There is also a demo banner plotted on the output graphics. You can input your own data, import data, create graphics, etc. In Trialware mode, you are allowed to use the program for 10 days from licensing or for 25 launchings, whichever comes first. You will see the usage/time meter on the startup screen. Trialware mode can be converted to a Single User license by entering a RockWare-supplied unlocking code. Trialware mode can also be extended if you contact RockWare.

3. Click Continue when the user and license type have been selected.

The program will now copy sample and system files to a LogPlot 7 folder in My Documents. It will also initialize all of the program's variables.

Single User - Running in Trial Mode and Unlocking

Single Users will now see a window that displays the number of user sessions and days remaining.



1a. To use LogPlot in Trial mode, click the OK button. (See Starting Up, page 12).

- 1b. Or, if you are ready to license your program (or if your trial period displays as expired), you can unlock the software by clicking on the **Unlock Trial Version** button and entering the following information.

! PLEASE BE SURE that, to unlock the program, you are the end user and are logged into Windows under your normal Windows login.

Registration Number: Type into this field the letters and numbers that are printed on a sticker on the CD, User Manual, and registration card you received from RockWare.

Single-User registration numbers contain the letters CS or AS or S. If you opted to download the program at purchase, you can contact RockWare for this number.

Licensee Name: Type in your company's name or, if purchased individually, your name. This will be displayed in the program's startup screen.

Installation Number: This is a number that's generated by the RockWorks program when it's first started. It is unique to each computer and each user.

Unlocking Code: This activates the Single-User license and is supplied by RockWare when you send us your Registration Number and Installation Number, described above. Contact RockWare at the addresses shown on page 12.

2. You can click OK to proceed, and jump to Starting Up LogPlot (page 12.)

Multiple User / Single Computer - Unlocking the Software

Note: You must have standard user or higher privileges (e.g. administrator) to unlock the Multiple Users / Single Computer license. Restricted users should contact their system administrator.

Multiple Users / Single Computer licensees will now see a window where the licensing information can be entered.

1. Enter the requested information.

Licensee Name: Type in your organization's name. This will be displayed in the program's startup screen.

Registration Number: Type into this field the letters and numbers that are printed on a sticker on the CD, User Manual, and registration card you received from RockWare.

Multi-User registration numbers contain the letters CM or AM. If you opted to download the program at purchase, you can contact RockWare for this number.

Installation Number: This is a number that's generated by the RockWorks program when it's first started. It is unique to each computer.

Unlocking Code: This activates the Multiple-User license and is supplied by RockWare when you send us your Registration Number and Installation Number, described above. Contact RockWare at the addresses on page 12.

2. You can click OK to proceed, and jump to Starting Up LogPlot (page 12.)

Network Computer - Logging In

Note: You must have standard user or higher (e.g. administrator) privileges to set up the network licensing. Restricted users should contact their system administrator.

Introduction

Network licensees will now see a window where their licensing information can be entered.

1. Enter the requested information.

Licensee Name: Type in your company's name. This will be displayed in the initial splash screen.

Registration Number: Type into this field the letters and numbers that are printed on a sticker on the CD, User Manual, and registration card you received from RockWare. Multi-User registration numbers contain the letters CN or AN. If you opted to download the program at purchase, you can contact RockWare for this number.

Certificate File: Use the Browse button to access the folder in which the network's certificate file "LP7.LIC" has been installed. This is a file that is supplied by RockWare after your purchase, initialized for the number of seats you purchased. You may not run the network version of LogPlot without access to the Certificate File which maintains the network count, among other things. To obtain the certificate file, contact RockWare at the addresses shown in the following topic.

When you/your network administrator receives the certificate file via email, save the file to a folder on the server to which all users have read and write access.

(Note to LogPlot2003 users: Specifying the User Folder is no longer necessary. All license types will make use of the My Documents\LogPlot 7\System folder for storage of user-specific files.)

2. You can click OK to proceed, and jump to Starting Up LogPlot (below).

Contacting RockWare, Inc

Web: www.rockware.com/unlock.html

Telephone:

within Colorado: 303-278-3534

within the U.S.: 1-800-775-6745

outside the U.S.: + 303-278-3534

Fax: + 303-278-4099

Please include:

- Your name
- Your company's name (if applicable)
- The Registration Number
- The Installation Number (Single User and Multiple-User/Single-Computer)
- How we should contact you (email, telephone, or fax)

The email address where the network license file should be sent (Network version).

Starting LogPlot

The First Time

After you have installed and licensed the program, and you have licensed the program as described in the previous topics, the program will now display an introductory startup screen that lists your license name and registration number.

- 1a. Single Users and Multi-Users: If you wish to hide the splash screen upon future launchings, insert a check in the **Skip this menu** the next time the program is started check-box, or (once LogPlot has launched) use the **Options / System Settings / Skip Intro Screen** setting.

1b. Network users only will be prompted to enter:

Default User ID: This is typically your name or other unique identifying string. The ID string is limited to 20 characters, including spaces. Your ID will be stored in the network Certificate File while you are using the program. When you exit LogPlot using the program's **File / Exit** command, your ID will be logged out of the Certificate File. The Certificate File will allow a specific number of unique users to log in at a time; for example if you purchased a 5-seat license, then 5 unique ID's are allowed to be logged in at any one time.

2. Click OK to continue.

The program will be displayed. A sample log design will be loaded automatically into the Log Designer window, and a blank data file will be loaded into the Data Editor window.

You will also see a tutorial window pop up onto the screen. This contains lessons about the program in general, and about specific tools within the program. We highly recommend that you go through some of these lessons to acquaint yourself with how LogPlot works. This window will display each time the program starts; you can turn it off using the **Options / System Settings / Show Tutorial on Program Start** setting.

Starting LogPlot the Next Time

If you've already installed and run LogPlot before, follow these steps to start up the program.

1. Click on the Start button on the Windows taskbar.
2. Click on the Programs or All Programs option.
3. Click on the RockWare item, and then on the LogPlot 7 program icon that's displayed in the pop-up menu.

If you have hidden the startup screen, you will be brought right into the program.

If you have not hidden the startup screen, it will be displayed, showing your current license type, registration number, and licensee name.

If you are running the program in 'Trialware' mode, you will see the number of sessions and the number of days you have left in your trial period. If LogPlot has been run before on this computer, the uses and/or days may be used up. This can be true even if you had uninstalled the software before re-installing. If you need more time, contact RockWare and we may be able to provide an "extension code."

4. If you want to continue with the current license type, click the OK button.

If you need to change your license type, such as changing from Single-User to Multiple User, click the **Change License Type** button.

Starting LogPlot with a Command Line

LogPlot can be launched with a specific data (.dat) file name to load, using command line parameters. Taking this one step further, the program can also be started with a whole batch of things to be done (data to load, settings to establish, log to compile, display, save, and export) via command line batch.

See Running LogPlot with Command Line Parameters (page 301).

Changing the Licensing/Removing the Licensing

Changing the Licensing

If you wish to change the type of license under which LogPlot is being run, follow these steps:

1. Contact RockWare to make the necessary arrangements.
2. Start up LogPlot.
3. On the "Welcome to LogPlot" startup screen, click on the ***Change License Type*** button.
4. Read the terms of the license agreement as necessary. If you agree to the terms, click in the ***I Agree*** checkbox at the bottom.

This will launch the LogPlot licensing program and display the screens described in Licensing LogPlot.

Removing the Licensing

If you wish to move the license from a particular computer, to move it to another computer, follow these steps:

1. Start up LogPlot.
2. Click on the ***Change License Type*** button on the initial "Welcome to LogPlot" startup screen.
3. Read the terms of the license agreement as necessary. If you agree to the terms, click in the ***I Agree*** checkbox at the bottom.
4. In the Licensing LogPlot window, choose the ***Remove*** option, and click ***Continue***.
5. The program will prompt you to confirm that this is what you wish to do. If you are certain, click ***Yes***. Or to cancel the process, click ***Cancel***.
6. If you click Yes, the program will display a window with a "status code". This is a number that confirms the removal of the license - write this down. You may need to supply this to RockWare when you request an unlocking code for a new computer.

Tips:

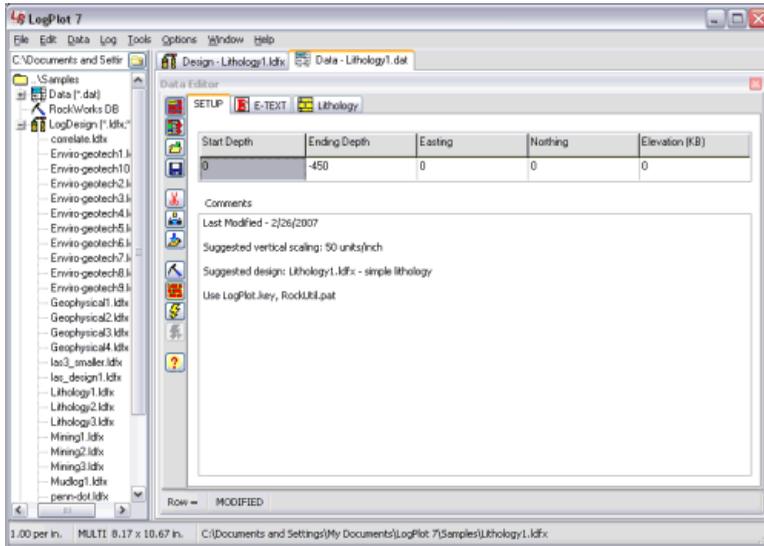
If the program's introductory screen has been hidden, you can re-activate its display using the **Options / System Settings / Skip Intro Screen** setting.

The LogPlot licensing program can also be run from the Start / RockWare menu.

The LogPlot Screens

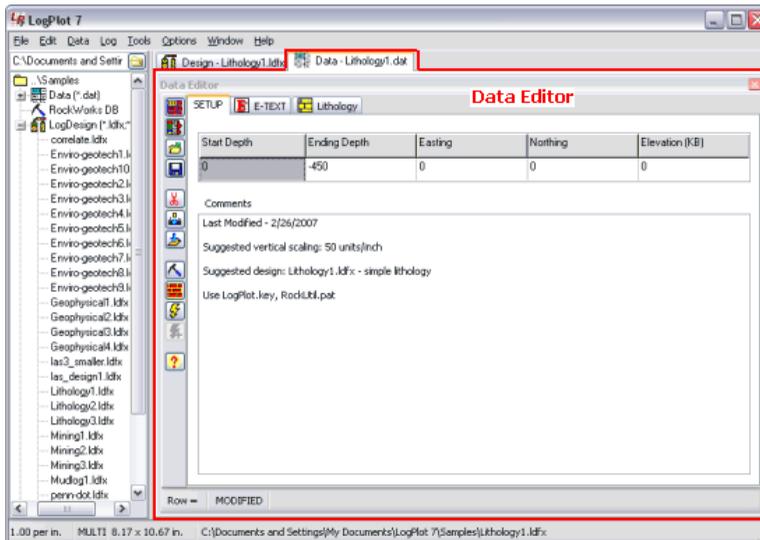
Before you get into the discussion of LogPlot particulars, you should familiarize yourself with the general layout of the program. When you start up LogPlot, you'll see the main program window.

The program first launches with two "tabs" available, one for accessing a data window and one for a log design window. As you use the program, you may see more tabs displayed for additional windows, such as log viewing windows, new data windows, etc.



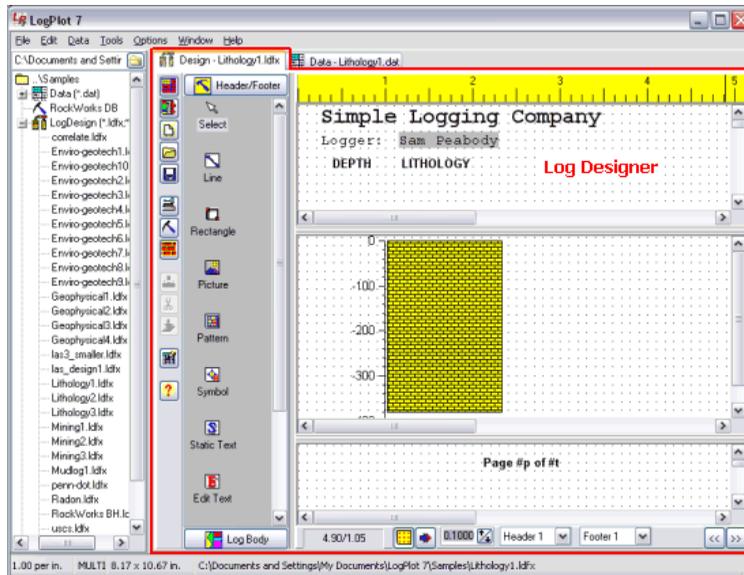
There are three main types of LogPlot windows:

Data Editor Window: A blank Data Editor window will be opened upon program startup. The Data Editor is used to enter or import the descriptive, textual, quantitative, or other data to be displayed on the log. Within the Data Editor, the different types of data are organized into "tabs". The data structure is discussed in Chapter 3 (page 135). You can have multiple data files open at any time.

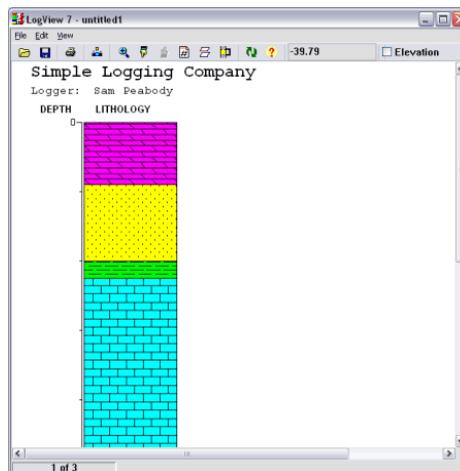


Introduction

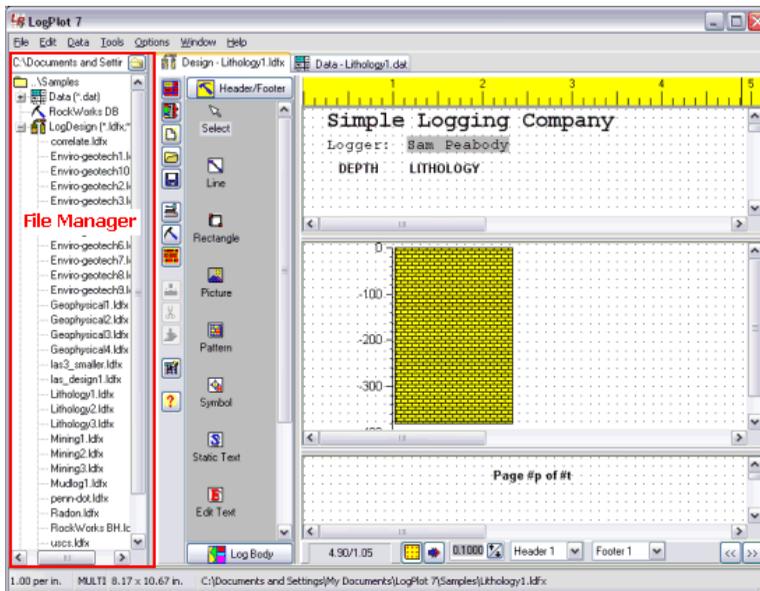
Design Window: The Log Designer window contains the design tools to create or modify a log design. This is discussed in Chapter 2 (page 21.).



View Window: The Log View window is used to display the compiled logs on your screen. Each time you compile a log, it will be displayed automatically in a new Log View window. Here you can save, print and export the graphic logs. See Chapter 4 (page 223.) for information about the process of compiling your data, and Chapter 5 (page 231) regarding displaying/printing/exporting your logs. You can have multiple View windows open at once.



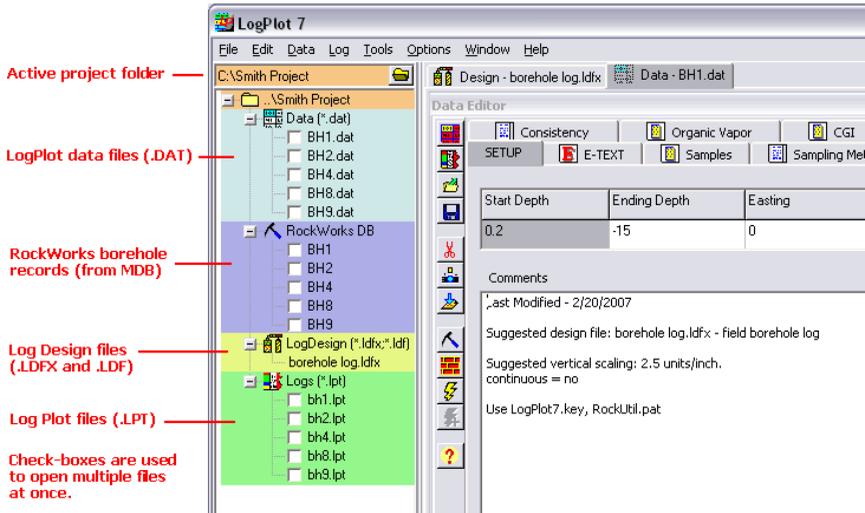
File Manager: Along the left edge of the main program window is a new pane used to display the LogPlot-related files that reside in the current working folder, for quick access - open files and compile data with a click. See the discussion of the LogPlot File Manager, next.



The LogPlot File Manager

The File Manager is displayed in a pane along the left edge of the LogPlot program window. It is used to display the LogPlot-related files in the current project folder, and allow you to open them and (for DAT files) compile them:

- LogPlot data files (.DAT) - opened into the Data Editor window.
- LogDesign files (.LDFX and .LDF) - opened into the Log Design window.
- Log Plot files (.LPT) - opened into the Log View window.
- RockWorks borehole/well files contained in an MDB - opened into the Data Editor window.



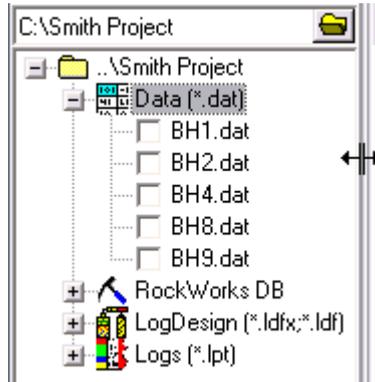
File Manager Right-Click Options

If you right-click anywhere in the File Manager pane, you'll see the following options:

- **Open Selected Files:** Any .DAT, .LPT, and RockWorks boreholes that are checked will be opened into their respective windows.
- **Compile Selected Files:** Any .DAT files that are checked will be compiled using the currently-active log design.
- **Select All:** Inserts a check-mark in all listed .DAT, .LPT, and RockWorks borehole files. (Log Design files are not shown with a check-box because you can only have one design open at a time.)
- **Unselect All:** Removes check-marks from all available boxes.
- **Refresh Files:** Reloads the names of the files in the current project folder.
- **Hide:** Hides the File Manager Pane. You can re-activate the display of the pane using the Window / Show File Manager option.

Displaying/Hiding/Resizing the File Manager Pane

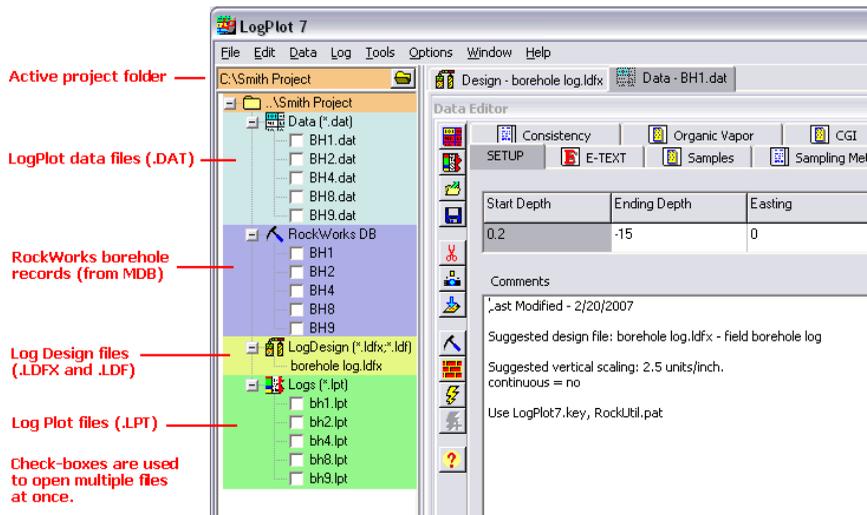
- Hiding the pane: Select the **Window / Show File Manager** option, in the main LogPlot menu, to remove the check-mark. Or, right-click in the File Manager pane and choose Hide.
- Displaying the pane: Select the **Window / Show File Manager** option, in the main LogPlot menu, to remove the check-mark.
- Widening/narrowing the pane: Use your mouse to "grab" the right edge of the File Manager pane and drag it to the left or right to make the pane smaller or larger.



Opening a Project Folder into the File Manager

1. Click on the open-folder button  at the top of the file manager pane.
2. Browse to the folder where the LogPlot files are stored, selecting the folder by clicking on it, and clicking OK.

The program will display all .DAT, .LDFX/.LDF, .LPT, and RockWorks boreholes that are contained in the folder.



Chapter 2 - Designing Your Logs

Log Designer Introduction

The Log Designer is a tool used to design your logs. Using Log Designer, you create the layout of the log, like a "blueprint". Once a design is completed, you can use LogPlot to compile your data into the design, to result in a graphic log.

Log Designer is built right into LogPlot. Just click on the Design tab to bring the Designer window to the front.

Log Designer contains the tools to design these parts of your log:

The log header: Log headers are positioned at the top of the log (optionally at the top of each page) and can contain text, graphics, symbols, patterns, lines, and rectangles. A new special header, called a "Report" can be a full page long and precede the first page of your log.

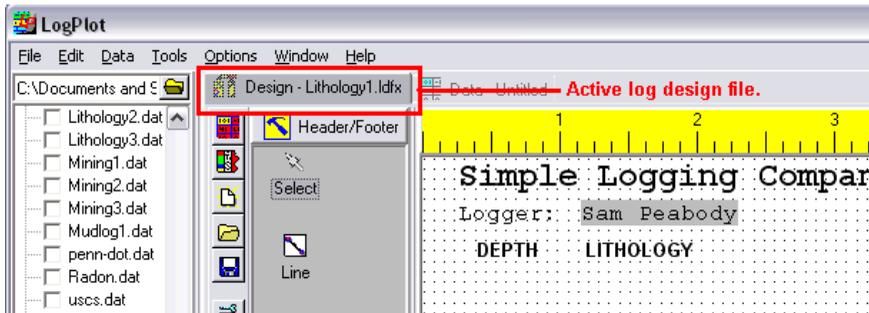
The log body: The main portion of the log, which can contain columns for lithologic patterns and descriptions, curves, bar graphs, fill bars, general and vertical text, well construction diagrams, raster images, symbol columns, and more.

The log footer: Log footers are placed at the bottom of the log (optionally at the bottom of each page) and can contain the same information as the header (text, graphics, symbols, patterns, lines, and rectangles).

Accessing the Log Designer

The Log Designer is built into LogPlot. To access the Log Designer screen, follow these steps:

1. Start up the LogPlot program if necessary.
2. Click on the Log Designer tab to bring that window to the front.



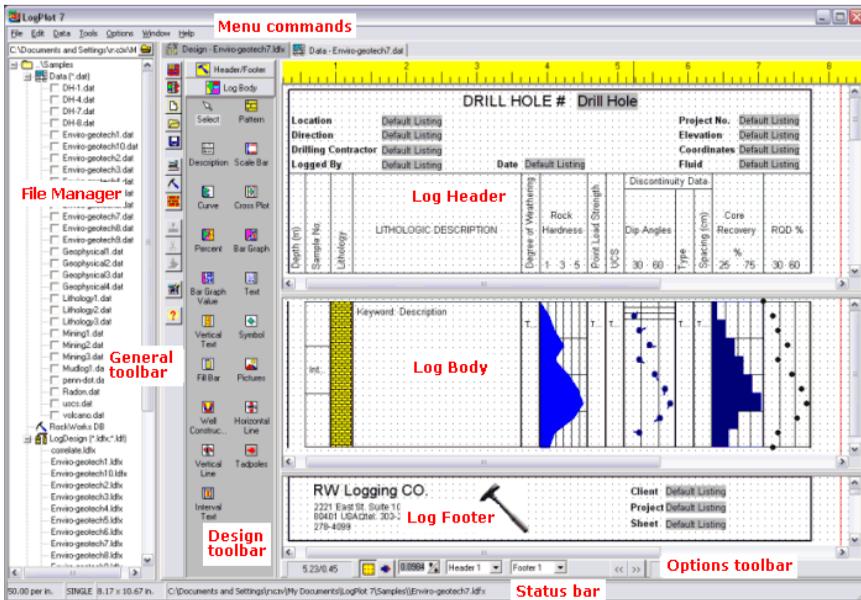
The program will display the Log Designer window, with the current or default log design displayed.

The Log Designer Screen

Before you get into the log format items themselves, you should familiarize yourself with some general design features of the program. The "Design Screen" is your work area: designing logs is simply a matter of "drawing" the desired format items in their appropriate

Designing Your Logs

positions on the design screen as if it were a piece of paper. When you open a log format (LogPlot is shipped with many), the program screen will look something like the example shown below. These screen items are summarized below.



- * The **Menu Commands** offer file utilities (saving, printing, etc.), editing utilities (clearing, sending items to the back), and other options (multiple headers, header size, shifting header items).
- * The **File Manager** shows the data (.DAT), log design (.LDFX or .LDF), plot (.LPT), and RockWorks borehole database (.MDB) in the current project folder. You can double-click or right-click on files to open them.
- * The **General Toolbar Buttons** are positioned to the right of the File Tree. They offer shortcuts to file and other menu functions.
! Note that this side toolbar can be dragged to the upper, lower, left, or right edge of the Design window.
- * The **Design Toolbar Buttons** offer the log header/footer and log body design items. They are grouped into header/footer buttons and log body buttons. You simply click on a button, place the associated item in the header or body where you want it, and establish any specific settings that may be required. Toolbar Buttons also offer easy access to other design features such as a reference grid and snap tools (along the bottom) and to file management tools (along the left).
- * The **Options Toolbar Buttons** offer shortcuts to Options menu functions, such as setting the reference grid, snapping, etc.
- * The **Log Header** can contain text, wrappable "notes", column legends, lines, rectangles, symbols, patterns, bitmap images (logos, maps, etc.) that are plotted at the top of your log or log page.

- * The **Log Body** can contain patterns, descriptions, scale bars, curves, bar graphs, text, pattern percent, symbols, fill bars, lines, bitmap, well construction, vertical text, cross-plotted curve columns, and tadpole plots.
- * The **Log Footer** can contain the same items as the Header, which are plotted at the base of your log or log page.
- * The **Status Bar** is displayed at the bottom of the window. It displays status information including the name of the active design file, printer paper size, and compiling settings such as vertical scale and single-page versus continuous logs.

See also: The LogPlot File Manager (page 17.)

Where Do I Start Designing?

With the LogPlot program started and a Log Designer window [open](#), follow these steps to either modify an existing log design OR create a new design from scratch.

Modify an Existing Log Design

1. Open the existing design: Select the **File** menu from the Log Designer menu. Select the **Open** command, and select the design (LDFX or LDF file) you wish to modify.
See the log samples shipped with the program.
2. Establish the printer and page size if necessary.
3. Add items to / delete items from the log body, and save the design.
4. Add items to / delete items from the log header and footer, and save the design.

Create a New Log Design

1. Create the new design: Select the **File** menu from the Log Designer menu. Select the **New / Log Design** command, and assign the new design a name.
2. Establish the printer and page size if necessary.
3. Add items to the log body, and save the design.
4. Add items to the log header and footer, and save the design.

Log Design Files (LDF)

Log Design Files Introduction

Log designs that you create in the Log Designer are stored on disk as XML-style "Log Design Files" with the ".LDFX" file name extension. An LDFX file can be thought of as the "blueprint" for the log. It contains the layout for the log header, body, and footer. This will tell the LogPlot program where all of your different data types will be plotted.

This is a new file type since LogPlot2005 which used binary ".LDF" files.

- LogPlot 7 will **open** both LDFX and LDF-format files.
- It will **save** only LDFX-format.

The ".LDFX" file that is displayed in the Log Designer is considered to be the default Log Design to be used in LogPlot when you compile your log. The name of the current log design is also displayed in the Status Bar at the bottom of the program window.

See also... The LogView window (page 231) for information about how to save/export completed, compiled graphic logs.

Create a New Design File

To create a new, blank work screen for designing a log format:

1. Access the Log Designer window as necessary.
2. Click on the **File** menu and select **New / LogDesign**, or click the New-File toolbar button



Since the Log Designer permits only one design to be open at a time, if an existing log design file is open and has not been saved when **New** is selected, the program will ask you whether you wish to save it. Answer as appropriate.

The program will then display a window in which you must give the new log design a name.

3. In the File Name prompt type in the name to assign the new design you will be creating. Log Design files must be given the file name extension ".LDFX."
4. Click the **Save** button.

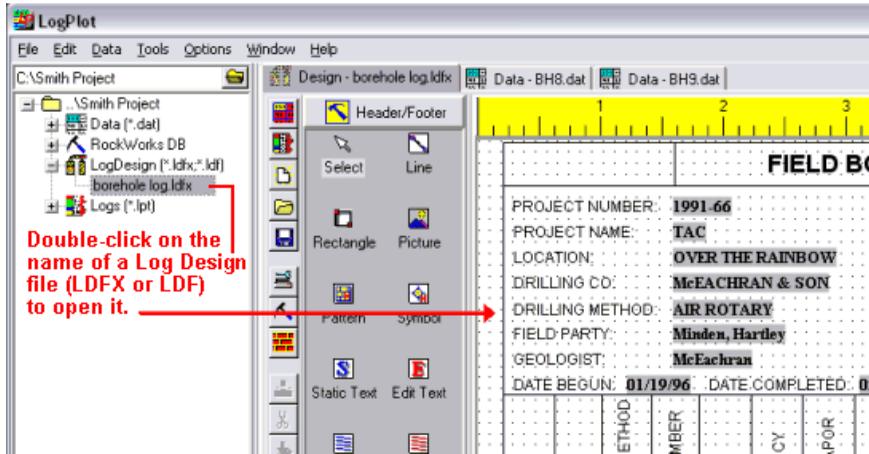
The Log Designer screen will be cleared, displaying a new, blank design, with the name you entered displayed in the title bar at the top of the window.

! This new file name will now be the default LDFX file to be used in LogPlot for compiling your logs.

Open a Log Design File

To open an existing log design file (.LDFX or .LDF) that has been saved on disk you have a few options:

1. Access the Log Designer window as necessary.
2. a. If you wish to open a recently-viewed LDFX file, click the **File / Reopen** option and select a file from the displayed listing.
b. Or, simply double-click on an LDFX or LDF file shown in the File Manager pane to the left of the design window.



c. Or, select the **File / Open** command from the Log Designer menu, or the Open-File toolbar button . The program will display the Open Log Design dialog box.

In this window, there may also be displayed a "preview" of the currently-highlighted log design file. These previews can be created automatically by the program (see page 27), and can be scaled smaller for a better view.

Select the log design file that you wish to view by highlighting it and choosing the **OK** button.

Important Notes:

- ! The Log Designer opens files in the LogPlot 7 log design format (.LDFX)
- ! The Log Designer opens files in the LogPlot2001-2005 log design format (.LDF). Because this is an older format, you will be warned should you try to save any changes to the design, that it will be resaved in the new LDFX format. LDFX files are not usable in versions older than LogPlot 7.
- ! The Log Designer also opens LPT files from LogPlot98, however it will display a warning that it will need to convert it to a newer format as it's being opened.
- ! The Log Designer permits only one log design file to be displayed at a time.
- ! The design displayed in the Log Designer window is always considered to be the default LDFX file to be used in LogPlot for compiling your logs. The name of the active file is always displayed on the stick-up Design tab, and also in the Status Bar at the very bottom of the program window.

Once you have opened a design file, you may edit it and save the changes (**Save** command) or save the changes under a new file name (**Save As** command). You may also print the design file.

See also: The LogPlot File Manager (page 17)

Opening a Log Design File using the File Manager

1. Expand the File Manager's **LogDesign** heading, as necessary.
2. Double-click on the name of the .LDF file you wish to open.

2. a. Click **Cancel** to cancel the Save operation.
 - b. Or, click **OK** to proceed. The program will display a window where you can enter the new name for the log design file to be saved. You can probably use the same file name since the extension will be changed to LDFX. For example, your file "borehole log.ldf" will be saved as a LogPlot 7-compatible file "borehole log.ldfx".

To save a log design file (.LDFX or .LDF) that is displayed on your screen *under a different file name*:

1. Select the **Save As** command from the **File** menu.
2. Enter the new name to assign to the design file, accessing necessary drives and/or directories, and choose **OK**.

! The Log Designer permits only one log design file to be open at any time.

! The LDFX file displayed in the Designer screen is automatically set as the default log design file in LogPlot.

Save Design Previews

Any time that you select the **Save** or **Save As** commands from the Log Designer's **File** menu, or click on the Save toolbar button, the program will save any changes you have made in the current log design on disk, under the existing or specified LDFX file name.

It will also automatically save a "preview" of the log design, using the JPEG (".JPG") graphic format. The JPEG preview will be assigned the same file name as the LDFX file (with ".preview.JPG" added on), and will be stored in the same folder on your computer as the LDFX file. For example, when the "Lithology1.ldfx" file is saved, the preview file "Lithology1.preview.jpg" is created or updated automatically.

The preview file is displayed within the Log Designer's Open-File dialog box, making it easier to determine which design file you wish to open.

The preview file is also displayed within Log Plot when you select the LDFX file to establish as default.

See Program Settings (page 283) for information about de-activating the LDFX previews.

Set the Log's Page Size

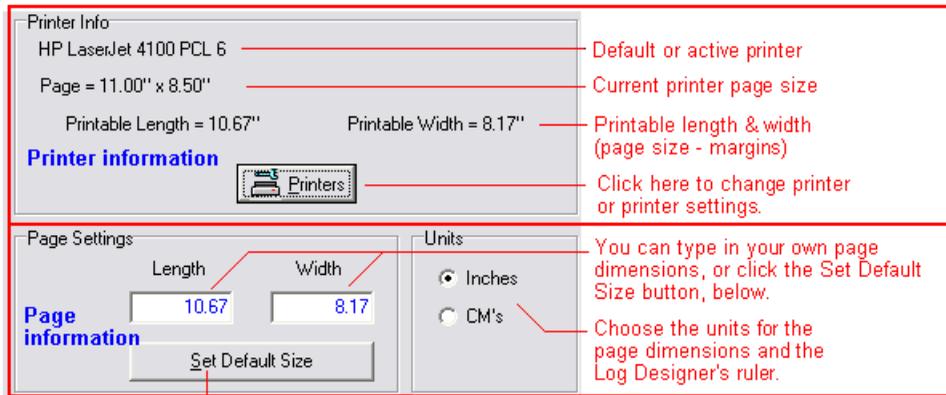
The size of the page that your log is compiled onto is defined within the Log Designer, and it is stored in your log's design (LDFX file), so that you know how much horizontal space you have for your design items. Vertical dimensions of the paper won't be as much of an issue in the log design phase since it isn't until you actually compile your data into a log that the paper length will determine log pagination along the length of the well. One exception to this is the need to know page length if you are designing detailed headers and footers and want to be sure to leave room for the log's body items!

Of course, page size is intimately tied to the printer you have selected, since single-sheet printers with small paper will restrict you to small pages, and banner-capable printers will allow almost unlimited-length pages.

Designing Your Logs

1. To set the log's page size, and to select the default printer, click on the **Page + Print Setup** button  on the Log Designer toolbar. Or, you can choose the **Page + Print Setup** command from the Designer's **File** menu.

At the top of the displayed window you will see a summary of the current printer information: the printer name, the paper size, the printable area on that paper for that printer. Note that if the printable width is greater than the printable length, the paper orientation is probably set to Landscape rather than Portrait.



Click here to set the Page dimensions to match the Printable Length & Width from above.

The page dimensions will be saved in the LDFX file.

2. To select a different printer (either for purposes of composing the log design or for actual printing), to change paper size, or to adjust paper orientation, click on the **Printers** button. You will see a standard Windows Print Setup dialog box.

To change the printer name, click on the down-arrow on the right side of the **Name** prompt to select a different printer that's installed on your computer. If you don't see the printer you wish to use, you'll need to return to Windows to handle that, using the **Start / Settings / Printers** option.

To change the paper size, select one of the options in the **Paper Size** list. To change orientation, click the **Landscape** or **Portrait** button as appropriate.

Note: Do not select **Landscape** paper orientation if you wish to plot in banner mode on a continuous-paper printer.

Other printer settings can be accessed using the **Properties** button.

Click **OK** in the Print Setup dialog box to return to the Log Designer page setup window.

Back at the Log Designer Page Setup window, note that there will be updated page dimensions and printable length and width dimensions if you made any of the changes listed above.

In the bottom portion of the dialog box, you will see the current length and width dimensions for your log page. If any of the dimensions are shown in red, then they exceed the available dimensions for the page as shown at the top of the window.

3. To re-calculate the LogPlot page size based on the current printer, click the **Set Default Size** button.
4. If you wish to change the units from inches to centimeters or vice versa, click the appropriate radio button. This will update the Printer Info (top) automatically. Be sure to click the **Set Default Size** button again to re-computer the new Log Designer page size.
 - ! The units that you select here will also determine the units of the ruler displayed at the top of the Log Designer window.
5. When the printer and page settings are established to your satisfaction, click **OK** to return to the Log Designer window.

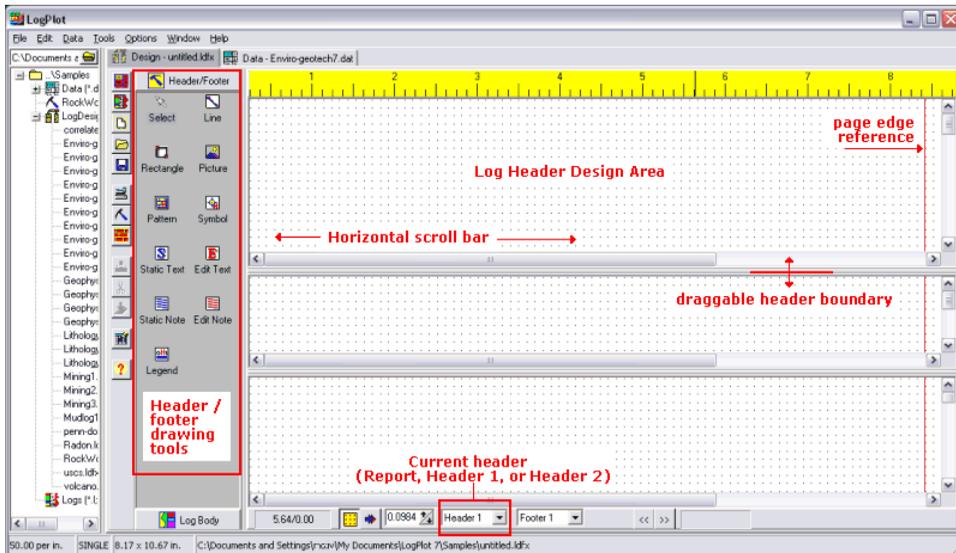
The program will update the window to reflect the horizontal dimensions of the page - you'll see a red line representing the printable width. If you changed the inch/cm units, the ruler will also be updated.

Designing the Log Header and Footer

Log Header Introduction

Log headers are plotted at the top of a log and typically contain textual information (company name, date, etc.), column labels, company logos, etc. Some of the header text is static or unchanging, while some (such as a date) change from log to log. The Notes tools display text that wraps.

Within the Log Designer work screen, the header is completely separate from the log body, and has a different set of command buttons.



Designing Your Logs

The log header can be up to approximately 10.5 inches in length. You may use the scroll bars provided at the bottom and along the right side of the header to view portions of the header than you cannot currently see. You may also change the displayed size of the header work area by positioning your pointer on the boundary bar at the bottom of the header and dragging it up or down as appropriate.

You can design three distinct header designs: a "Report" header which can precede the first page of the log, "header 1" which is typically printed at the top of the first page, and "header 2" which typically displays on middle and end pages of the log. All are optional.

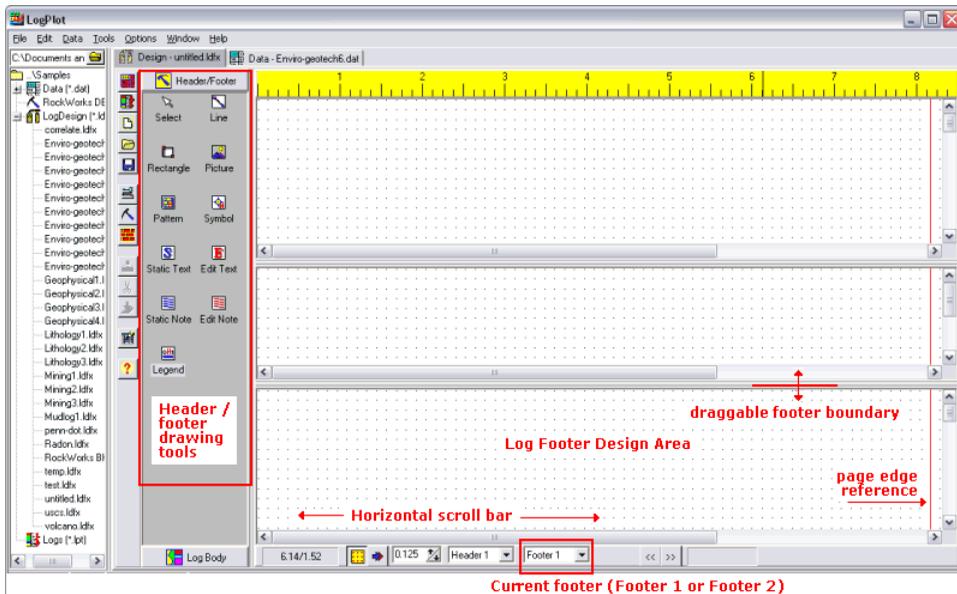
When you invoke the **New** command (**File** menu) to create a new log design, the program will display a blank design screen. You may then insert a log header item by selecting one of the header toolbar buttons and placing the item in the log header section. You may use the displayed ruler for horizontal placement reference.

! Items in the log header cannot be moved into the log body and vice-versa. However, header items can be copied into and from the log footer.

Log Footer Introduction

Log footers are plotted at the bottom of a log, or at the bottom of each log page. Like the header, they can contain textual information (company name, date, etc.), column labels, company logos, etc. The footer text can be static (unchanging) or can change from log to log. Log footers can also contain the new Notes tool for wrapping text.

Within the Log Designer work screen, the footer's work area is at the bottom of the window. It shares the same command buttons as the log header.



The log footer can be up to 5 inches in length. Use the scroll bars provided at the bottom and along the right side of the footer to view portions of the footer than you cannot currently see.

You may also change the displayed size of the footer work area by positioning your pointer on the boundary bar at the top of the footer and dragging it up or down as appropriate.

You can design two distinct footer designs: "footer 1" which is typically printed at the bottom of the first page, and "footer 2" which typically displays on middle and end pages of the log. All are optional.

When you invoke the **New** command (**File** menu) to create a new log design, the program will display a blank design screen. You may then insert a log footer item by selecting one of the footer toolbar buttons and placing the item in the log footer section. You may use the displayed ruler for horizontal placement reference.

! Items in the log footer cannot be moved into the log body and vice-versa. However, footer items can be copied into and from the log header.

Header/Footer Mechanics

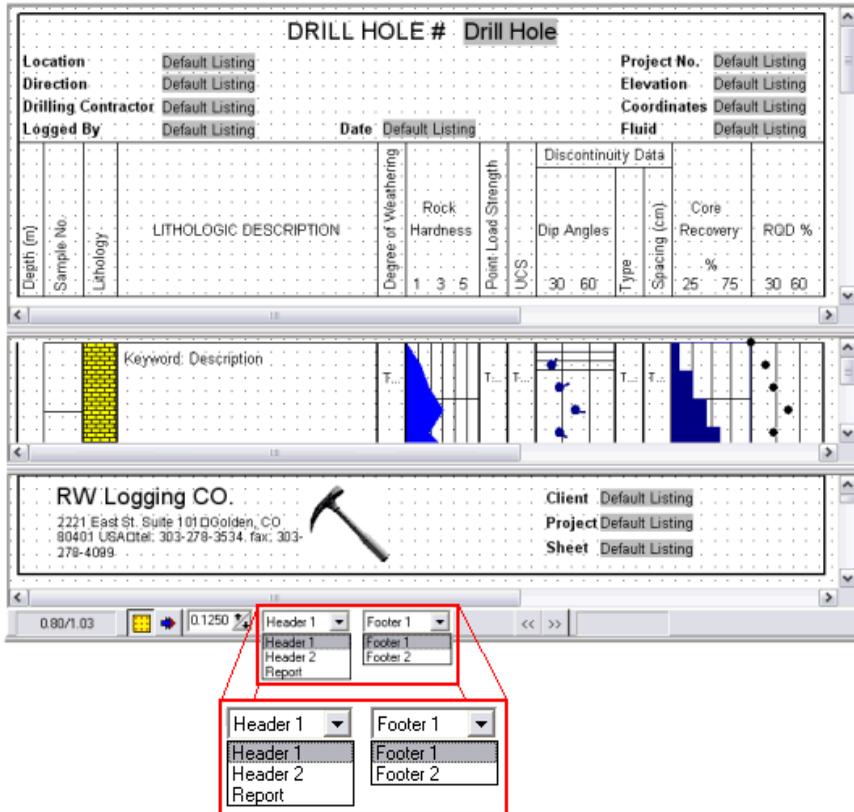
Three Headers and Two Footers

The Log Designer permits you to design three different headers and two different footers for each log:

- "Header 1" is typically plotted on the first page of the log, and presumably contains more elaborate information that does not need to be duplicated on subsequent pages of the log.
- "Header 2" is typically plotted on the second and subsequent pages of a log, and can contain an abbreviated form of the primary header.
- The "Report" can be up to a full page in length and is always displayed before the first log page.
- "Footer 1" is typically plotted on the first page of the log.
- "Footer 2" is typically plotted on the second and subsequent pages of a log.

You can toggle between these header and footer views using the drop-down lists at the bottom of the window.

Designing Your Logs



To view or design the first header, for example, select Header 1 from the list, and that will be displayed in the header pane of the design window. To view/design Footer 2, select that from the list and it will be displayed in the footer pane.

At compile time, you will have the opportunity to specify exactly which headers and footers to use on the first / middle / last pages of the log, if any, and whether a header report is to be included.

! All header and footer designs are optional.

Header and Footer Scaling

During the compiling and plotting of the log in LogPlot, the header and footer portions of the log are not affected by changes in the vertical log scale - they always remains the same size no matter how condensed or elongated the log body is.

If you need to change the size of the text characters themselves in the header or footer, you can do this by adjusting the font size in the Log Designer. This entails double-clicking on the text item itself, clicking on the Font button in that item's Setup dialog box, and changing the font size there.

To change the size of any images (JPG, BMP, TIFF, etc) in the log header or footer, you must resize the picture itself in the Log Designer. (See Moving or Resizing Header/Footer Items on page 38).

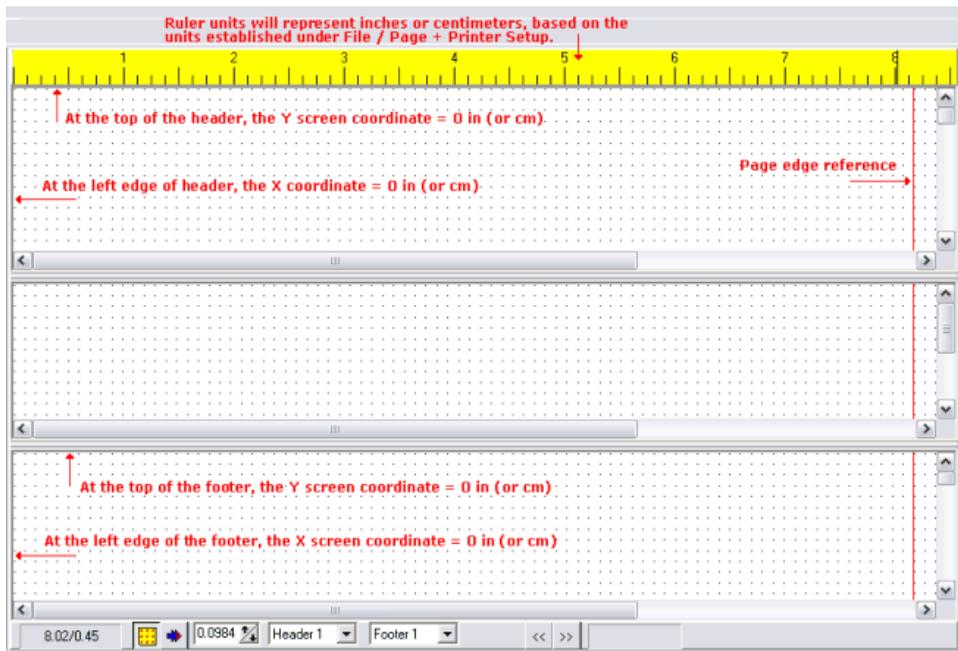
Header and Footer Coordinates

The placement of any header item is stored in terms of horizontal (x) and vertical (y) inches or centimeters.

! LogPlot2003 and earlier versions stored placement in screen pixels. The Log Designer will open older design files and automatically translate the pixel coordinates into inches/centimeters for you.

The horizontal coordinates start at 0 along the left edge of the screen and increase to the right in decimal inches or centimeters. The horizontal range of the design page is dependent upon the currently-selected printer, page size, and orientation (established under the **File / Page + Print Setup** command), since a printer with 15" paper will allow more design space (wider logs) than one with 8.5" paper. The paper's right edge will be shown with a red line.

The vertical coordinates of the header are expressed as decimal inches/centimeters *relative to the top of the paper or design screen*. At the top of the header, the y-coordinate is 0. It extends down to the length of the currently-selected printer page. The vertical coordinates of the footer are recorded in decimal inches/centimeters relative to the *top of the footer*.



You can turn on a reference grid at a user-defined pixel density to aid you in placing header items. You can also activate "snapping" of items to that grid.

Designing Your Logs

The entirety of the header or footer may not be visible at one time; you may use the scroll bars to view hidden portions, or you may increase the size of the visible header or footer pane.

You can change the units that are displayed in the reference ruler by selecting the **Inches** versus **cm's** option in the printer and page settings (**File / Page + Print Setup** command). If you change the units in the page setup, be sure to re-compute the default page size.

You may use as much or as little of the available header and footer space as you wish. When you compile your data into the log design within LogPlot, the program will honor any white space at the top of the header and footer, assuming you've left that space there as an upper margin. However, the program will not include blank space below the lowest header item - it will start the log body wherever the header ends (plus any header/footer margin you've declared), and the lowest footer item will be placed at the bottom of the page.

Changing the Header or Footer Viewing Size

You can change how much of the header or footer is visible at any time on the design screen by dragging the horizontal boundary line that divides the header or footer from the log body.

1. Click on the Pointer tool  to select it.
2. Position the pointer on the header boundary or footer boundary and watch for the cursor to change to: 
3. Depress the mouse button to "grab" the boundary line.
4. With the mouse button depressed, drag the header or footer boundary up or down as desired.

! The actual size of the header or footer is not changed using this process - instead, more or less of it is **shown** on the design screen. You can, for example, have a very long header of which only a portion is visible within the design screen. When compiled with data in LogPlot, however, the entire header shows up.

If the header or footer boundary will not move, it may be that one of the design areas has reached a minimum display size. Try increasing the size of the entire Log Designer window, or making the log body portion of the screen shorter.

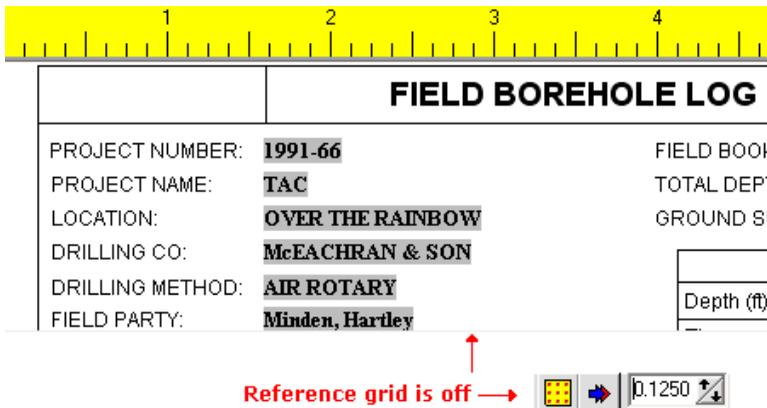
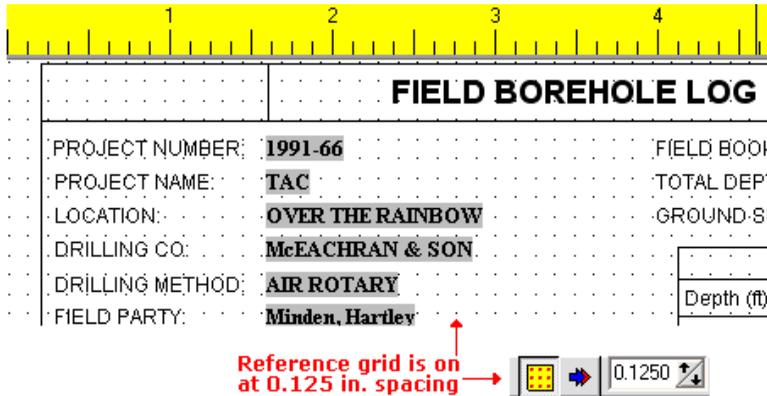
The physical size of the header and footer is limited horizontally by the printer and page size you have selected (**File** menu / **Print + Page Setup** command).

Vertically, Headers 1 and 2, and Footers 1 and 2 can be up to about 10.5 inches (26.7 cm) in length, though realistically you'll probably design them significantly shorter than that. Report headers can occupy a full page.

Any unused space *below* the last header and footer item will be truncated. Any white space *above* the header and footer will not be truncated.

The Reference Grid and Snapping Items

To aid you in placing your design entities, the Log Designer offers a reference grid. If activated, the program will display a grid of dots in the header, footer, and log body portion of the design screen. The resolution of the grid (e.g. spacing of dots in decimal inches or centimeters) can be determined by you.

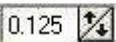


In addition to the display of the reference grid, you can also activate "snapping" to the grid. If activated, when you place a log design entity in the header, footer, or log body, the program will "snap" the item to the nearest grid point. This can make life a little easier when trying to line up design entities.

Note that you can always override the "snapped" coordinates by entering new coordinates in the item's setup dialog box.

How to...

Turn on the reference grid

1.  Click on the **Show Grid** button at the bottom of the design screen.
2.  Adjust the resolution of the grid by clicking on the up-arrow or down-arrow button in the resolution box to the right of the **Show Grid** button. The units are decimal inches or centimeters, as defined in the **File / Page + Printer Setup** option.

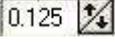
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A setting of "0.125," as shown in the example above, means that the dots will be displayed horizontally and vertically every 1/8th of an inch.

3. As you change the resolution setting, notice how the appearance of the grid changes within the Log Designer screen.

The resolution setting is shared by the **Snap** button, below, if activated. It is possible to turn on the grid while leaving the snapping off.

Turn on snapping

1.  Click on the **Snap** button at the bottom of the design screen. "Snapping" is activated when the button looks like it is pushed in.
2.  Adjust the snapping resolution by clicking on the up-arrow or down-arrow button in the resolution box to the right of the **Snap** button.

The resolution setting is shared by the **Show Grid** button, if activated. Snapping and the reference grid may be activated independently of each other, although it can be helpful to have the grid displayed when snapping is turned on.

For snapping, a setting of "0.125," for example, means that *subsequent* design items that you place will be snapped to the nearest 1/8th of an inch or cm, both horizontally (for all design items) and vertically (for header and footer items).

Any *existing* design items that are already placed will not be affected by the turning on of snapping unless you use the pointer to reposition them.

! We recommend that you set the snap resolution to a multiple of 1/16th (0.0625, 0.125, 0.25, etc.). This prevents rounding errors that can occur when the program toggles back and forth internally between pixels (on the drawing screen) and actual inch units.

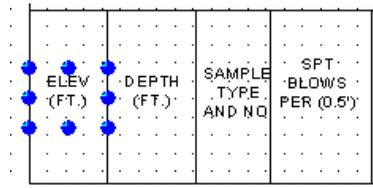
See also: Pages 38 and 72 for information about dragging, resizing, and aligning items. The alignment tools are very handy for regular spacing of text, and edge alignment.

Selecting Items in the Log Header/Footer

To select a single item in a log header or footer:

1. Use your mouse to position the screen pointer on the item, and single-click it.

The selected item should appear with "handles" in the upper-left corner (static text), on either end (lines) or on all corners (other header/footer items).



To select multiple items in a log header or footer:

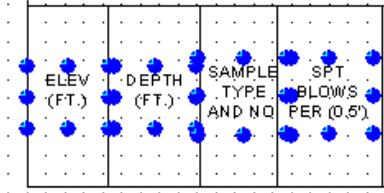
1. Use your mouse to position the screen pointer on an item and click the left button once.
2. Then, hold the Ctrl key down while you select another item.

3. You may continue in this manner to select multiple items.

All selected items will appear with "handles" on their corners.

OR

1. Use the screen pointer to "draw" a rectangular region within the header or footer. Any items in whole or in part within that bounding rectangle will appear selected (with "handles").



To select all of the items in a log header or footer:

1. Use your mouse to click in the pane of the items to be selected.
2. Choose the **Edit / Select All in Pane** option.

The program will select all of the items in the pane.

To select an item using the << and >> buttons:

LogPlot offers two buttons at the bottom of the design screen that can advance sequentially through the log entities.



1. Any time that a log design is displayed on the screen, you can click on the forward- or backward-arrow buttons at the bottom of the design screen to advance sequentially through the log entities, changing the highlighted focus of the entities in the order they were added to the log design.

The selected item should appear with "handles" on either end (if it is a line) or on all four corners (all other header/footer items).

Use the "Entity List" to access a design item and its settings.

1. With a log design displayed on the screen, select the **View / Entity List** command, or click the View Entity List button .

The program will display a listing of all of the items in the current log design.

2. To access a specific item, scroll down the list as necessary until you see it, and left-click once to select it. When selected, it will appear highlighted. (You can sort the entity list using any of the columns - name, type, etc.)

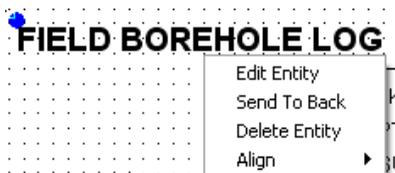
3. Click on the **Edit** button to display this item's settings.

4. Edit the settings as you wish, or simply press OK or Cancel to close the settings window.

The item will remain active when you are returned to the design window.

Options

Once an item is selected, you can view or change the item's settings by right-clicking on the item and selecting **Edit Entity**.



Move an entity to the back

Because you can overlay items in a log design, it can be difficult to click on an item that's stacked on the "bottom of the pile." Log Designer contains a "Send to Back" command that changes the stacking order of the entities on the screen.

1. Use your mouse to position the screen pointer on the item that's blocking the item you wish to select, and single-click it.

The selected item should appear with "handles" on either end (if it is a line) or on all four corners (all other header/footer items).

2. Select the **Edit / Send to Back** command.

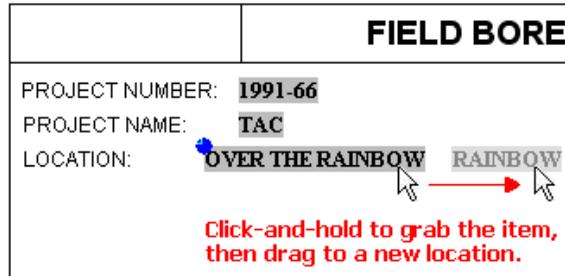
The selected item will now be displayed behind other items in the design, allowing you to click on them to move them or to access their settings.

Move or Resize Header/Footer Items

You can move and resize log header and footer items using several methods:

Manually: You can reposition header and footer items (and resize lines, rectangles, and pictures) by grabbing (left-click-and-hold) and dragging them on the design screen itself. The program also offers a reference grid and a "snapping" feature to make it easy to line things up. You may select items individually or in groups.

1. Click on the pointer button in the Log Designer toolbar.
2. Click on the item to be moved to select it. It will display small "handles" to indicate it's selected. To select multiple items, hold down the Ctrl key and click on additional items.
3. Keep the mouse button depressed and drag the item to its new location.



If you need to move the item just a pixel or two, you can use your keyboard's arrow keys to "nudge" the item left or right.

Or, to resize an item (other than text), click on the largest handle, located at the lower-right corner or at the end of the line. Keep the mouse button depressed and drag that corner or end point to the new location. Release the mouse button when it is resized as you wish.

Alignment Tools: Use the **Edit** menu's **Align** tools to assist you in getting your header/footer items arranged.

1. Click on the pointer button in the Log Designer toolbar.
2. Click on the first of the items to be aligned. This is the "reference" item, to which the other items you choose will be lined up with.
3. Hold down the Ctrl key and click on the additional items to be lined up with the first.
4. With all of the items selected, click on the **Edit / Align** option you wish to use. (Or, right-click and choose **Align / ...**)

Align Left: Multiple items will be set to the same left (X1) coordinate.

Align Right: Multiple items will be set to the same right (X2) coordinate.

Align Top: Multiple items will be set to the same upper coordinate (Y).

Align Bottom: Multiple items will be set to the same lower coordinate (Y).

Align / Horizontal Spacing: Items will be spaced evenly from left to right.

Align / Vertical Spacing: Items will be spaced evenly from top down.

Remember, alignment will occur based on the first item selected.

Dialog box: Each log header/footer item has characteristics that can be set via a dialog box. Within the dialog box, there are "coordinate" edit boxes that display the current horizontal and vertical coordinates for the item. You may change the placement of the header/footer item by editing these coordinates. You can also use the dialog box to change font type and sizes for text items, line styles, etc.

1. Click on the pointer button in the Designer toolbar.
2. Double-click on the text item to display its dialog box. (Or, right-click on the item, and select **Edit Entity**.) (Or, double-click on the item in the **Edit / View Entity List** screen.)

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3. Edit the x and/or y coordinates for the item.
4. Click the **Apply** button to see the effect of the position change.
5. Click **Close** to close the Settings window and return to the design screen.

It is typically easier to use the manual method since it involves working right on the design screen, and you can see what you are doing. And, with the reference grid and snapping features, it's easy to line things up.

However, you might find it valuable to use dialog box coordinates if you need to align items at a resolution different than that of the snapping grid.

For example, if you have a column of header text that you want to be lined up along the left edge, you could use each item's dialog box to set the horizontal (x) coordinate to the same value:

PROJECT NUMBER:	1991-66
PROJECT NAME:	TAC
LOCATION:	OVER THE RAINBOW
DRILLING CO:	McEACHRAN & SON
DRILLING METHOD:	AIR ROTARY
FIELD PARTY:	Minden, Hartley
GEOLOGIST:	McEachran

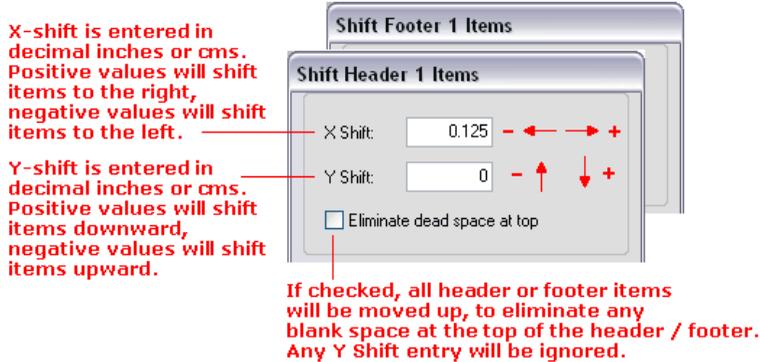
X-coordinate for all of these Edit-Text items is the same.

Shifting Header / Footer Items

To shift all of the items in the header or footer by the same amount, follow these steps:

1. Select the **Shift Header/Report Items** command or **Shift Footer Items** command from the **Edit** menu.

The program will display this dialog box:



2. Enter the X (horizontal) and/or Y (vertical) shift, in decimal inches or centimeters, for *all* of the header items or footer items.
Or, you can insert a check in the "Eliminate dead space at top" box to shift all of the header or footer items vertically to the top of the page or the top of the footer. Any y-shift entered in the prompt box will be ignored.
3. Choose **OK** to move the header or footer items the indicated amount, or choose **Cancel** to cancel the operation.

Remember that the horizontal range of the header and footer depends on the default printer and page size (**File** menu / **Page + Print Setup** command). The vertical range of the header is defined by the page length..

The **Shift Header Items** and **Shift Footer Items** commands are not affected by any snapping settings you may have established.

Cut-paste or copy-paste header/footer items

To "cut" or "copy" header or footer items and then paste them, follow these steps:

1. Click on the item(s) in the log header or footer to be cut or copied. They should appear with "handles" in the upper-left corner (static text), on either end (lines) or on all corners (other header/footer items).

2. If you wish to *remove* the selected item(s), click on the **Cut** toolbar button  or select the **Cut** command from the **Edit** menu. The item(s) will be removed from the header/footer and placed in the Log Designer clipboard.

If you wish to *make a copy* of the selected item(s), click on the **Copy** toolbar button  or select the **Copy** command from the **Edit** menu. The item(s) will remain in the design and a copy will be placed in the Log Designer clipboard.

3. Click in the region into which the item(s) should be pasted.
Remember to toggle between the active header and footer panes using the drop-down list at the bottom of the program window.
4. Paste the cut or copied item(s) into the selected header or footer by clicking on the Paste toolbar button  or by choosing the **Paste** command from the **Edit** menu.

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Log Designer will insert the item(s).

! If the item is pasted into the *same region* (footer2 to footer2, or header 1 to header 1) then the coordinates will be offset slightly so that you can see the pasted item.

If the item is pasted into a *different region* (header 1 to header 2), the location coordinates will be honored exactly.

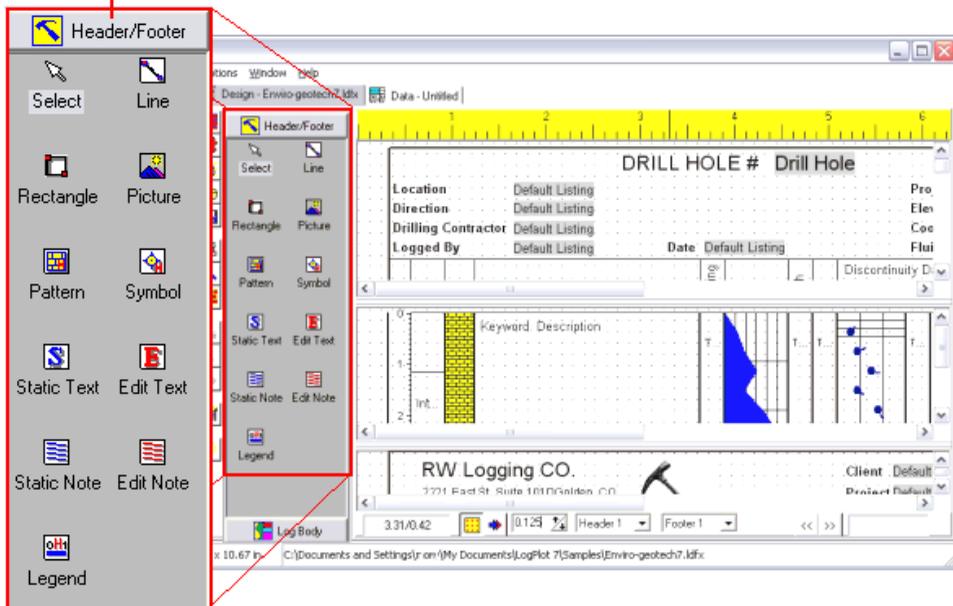
5. If you pasted a single item, the program will display its dialog box for confirmation of coordinates and/or entity name. If necessary, edit the entity name, and/or the positioning coordinates for the item.
6. Click on the **Apply** button to accept any changes you have made to the item's settings, and press **Close** to close the dialog box.
7. You can also reposition items within the same header or footer by dragging them to the desired location.

Header/Footer Items

Header/Footer Item Summary

Here is a summary of the items that you can include in a Log Design header and footer. Remember that the log header and footer sections share the same tools. The tool buttons are found in the Log Designer tool pane, to the left of the program window. These items are discussed in the remainder of this section.

Click here to display the header & footer tool buttons





Header/Footer Line

This tool simply plots a line anywhere in the header or footer of the log.



Header/Footer Rectangle

Use this tool to draw a rectangle anywhere in the header or footer of the log.



Header/Footer Picture

You may insert a picture (logo, etc.) in a raster format (BMP, JPG, TIFF, PNG, PCX, TGA), or a Windows Metafile format (WMF, EMF) into your log header.



Header/Footer Pattern

The Header/Footer Pattern tool permits you to include a rectangular pattern block in the header or footer, usually to create an index to the lithology patterns used in the log body.



Header/Footer Symbol

This tool is used to insert a symbol into the log header or footer, usually to create an index to the symbols included in the log body.



Static Text

“Static Text” is header or footer text that does not change each time you plot a log. It is frequently used to label columns, list the unchanging logging company name, or to serve as a label for changing text entries (“Edit Text”). It can also be used to insert automatic page numbers in the header or footer.



Edit Text

“Edit Text” is header or footer text that can change, based on what is listed in the data file. This could include dates, client names, well locations, and such.



Static Notes

“Static Notes” allow you to enter longer text information into the header or footer than is available using the Static Text item. The text will wrap within the space defined for the note block. The text to be plotted is entered into the log design and does not change from log to log.



Edit Notes

“Edit Notes” are like Static Notes, above, except that the text to be plotted in the block is entered in the data file, so that it can easily change from log to log. These notes might be thought of as wrappable Edit Text labels.



Column Legend

This tool is used to insert a legend for a quantitative data column (curve or bargraph), automatically displaying the column's name, graphic line style, and value range.

See also: Viewing a List of the Log Entities (page 66).

Adding Header/Footer Lines

Use: The **Header/Footer Line** button is used to draw a line at any angle, anywhere in the header or footer portion of the log. This is a fixed design item with no corresponding data file commands.

How to...

Draw a Header/Footer Line

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



if necessary to display the header/footer design buttons.

3. Select the **Header/Footer Line** button  from the Log Designer tool pane. (Or, you can use the menus: **Tools / Header/Footer Items / Line.**)

The pointer will change shape to a "+" for "drawing" the line on the design screen.

4. Place the "+" at the intended location in the header or footer for one of the line's endpoints.
5. Hold the mouse button down and drag until the "+" has reached the second endpoint for the line.
6. Release the mouse button.

The line will be displayed on the screen.

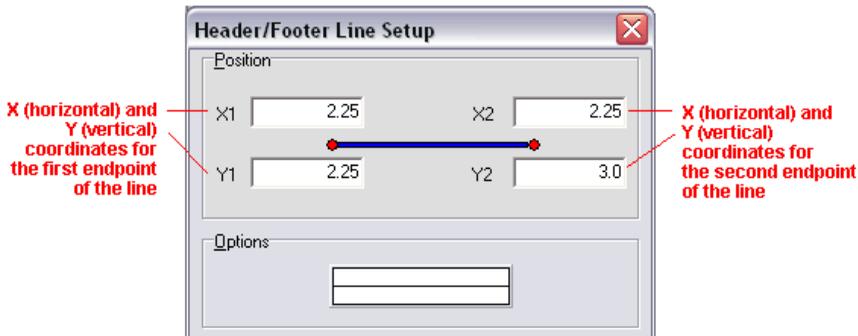
Reposition the Line

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Access the Line Options

You can use the Header/Footer Line Setup window to adjust the line's position, and its style, thickness, and color.

1. Double-click on the line to access its Setup window. (Tip: You can also right-click on the line and choose **Edit Entity**, or you can locate the line in the **Edit / View Entity List** screen.)



2. Adjust the line's placement by editing the beginning and ending coordinates. (You can also reposition it by dragging with your mouse, as discussed above.) The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen, and the vertical coordinates are relative to the top edge of the design screen. See Header/Footer Coordinates (page 33) for more information.
3. Adjust the line's appearance by clicking on the line sample and choosing style, thickness, and color. Click OK to close the line properties window.
4. To accept the displayed information, click the **Apply** button. You will see the line displayed on the screen according to your settings. You may continue to adjust the line if necessary, remember to click **Apply** any time you want your changes applied.
5. To close the Line Setup window, click the **Close** button.

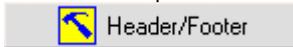
Adding Header/Footer Rectangles

Use: The **Header/Footer Rectangle** button is used to define a rectangle anywhere in the header or footer portion of the log. This is a fixed design item with no corresponding data file commands.

How to...

Draw a header/footer rectangle

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



if necessary to display the header/footer design buttons.

3. Select the **Header/Footer Rectangle** button  from the Log Designer tool pane. (Or, you can use the menus: **Tools / Header/Footer Items / Rectangle.**)

The pointer will change shape to a "+" for "drawing" the rectangle.

4. Place the "+" at the intended location for the upper-left corner of the rectangle, in the header or footer portion of the design screen.
5. Hold the mouse button down and drag down and to the right until the "+" has reached the opposite corner point for the rectangle.
6. Release the mouse button.

The rectangle will be displayed on the screen.

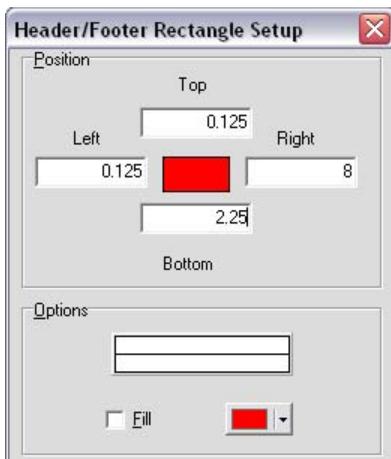
Reposition the Rectangle

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Access the Rectangle Options

You can use the Header/Footer Rectangle Setup window to adjust the rectangle's position, the line style, thickness, and color, and its fill color, if any.

1. Double-click on the rectangle to access its Setup window. (Tip: You can also right-click on the rectangle and choose **Edit Entity**, or locate the line in the **Edit / View Entity** List screen to access its settings.)
2. Adjust the rectangle's placement by editing the edge coordinates:



Left, Right: These coordinates determine the horizontal placement of the left & right edges of the rectangle in the header/footer of the log. You may change the rectangle's position by editing these values, or by simply moving or resizing the item on the design screen itself, as discussed above. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen.

Top, Bottom: These coordinates determine the vertical placement of the top and bottom edges of the rectangle in the header/footer of the log. You may change the rectangle's position by editing these values, or by simply moving or resizing the item on the design screen itself. The vertical coordinates are expressed in decimal inches or centimeters relative to the top edge of the design screen.

3. Adjust the rectangle's appearance by clicking on the line sample and choosing style, thickness, and color. Click OK to close the line properties window.
4. **Fill:** Insert a check in this box if you want the rectangle to be filled with color. Then click on the color box to the right to select the fill color.
5. To accept the displayed information, click the **Apply** button. You will see the rectangle displayed on the screen according to your settings. You may continue to adjust the settings if necessary, remember to click **Apply** any time you want your changes applied.
6. To close the Rectangle Setup window, click the **Close** button.

Inserting Header/Footer Pictures

Use: The **Header/Footer Picture** button is used to insert a picture into the header or footer of the log. This would typically be used to insert a company logo into the log design, but could also be used to insert a picture of a site map, etc. The picture may be in any of the following graphic formats: BMP, JPG, Windows Metafile (WMF or EMF), PCX, PNG, TGA, and TIFF. This is a fixed design item with no corresponding data file commands.

How to...

Insert a Picture into the Log Header or Footer

1. Access the Log Designer window.

- In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



Header/Footer

if necessary to display the header/footer design buttons.

- Select the **Header/Footer Picture** button  from the Log Designer tool pane. (Or, you can use the menus: Tools / Header/Footer Items / Picture.)



The pointer will change shape to a " " for placing the picture.

- Place the cursor where you want the upper-left corner of the picture to be, in the header or footer portion of the design screen, and click the left mouse button to insert it.

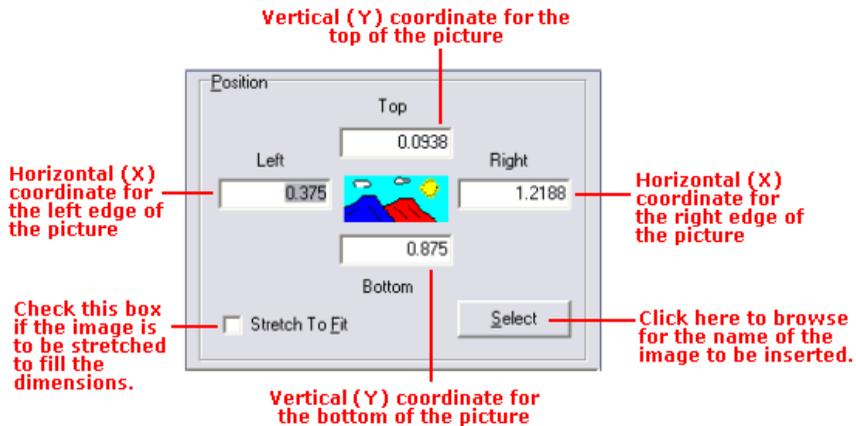
The program will display the Setup window, and you'll see a rectangle labeled "no image" in the log design.

- Enter the requested information:

Select: Click on this button in the lower right portion of the window to browse for the name of the image to be inserted into the design, accessing other folders as necessary. The program can read BMP, JPG, WMF, EMF, PCX, PNG, TGA, and TIFF-format files. When you have located the file, click on its name, and then click the Open button to select it.

You will be returned to the Graphic Setup window, and the image will be shown in the background, in the design.

Position: These coordinates determine the placement of the rectangle in the header or footer of the log.



**Coordinates are listed in decimal inches or centimeters.
Units are established under File / Page + Printer Setup.**

You may change the position of the picture by editing these values, or by moving the picture itself on the work screen. Remember that the y or vertical coordinates are expressed in coordinates relative to the top of the header or footer.

Stretch to Fit: Insert a check in this box if you want Log Designer to stretch the image to fit in the defined boundaries, changing the image's horizontal-to-vertical ratio. Leave this box cleared if the aspect ratio for the image is to be maintained.

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6. To accept the displayed settings, click the **Apply** button. You will see the picture displayed on the screen at the declared location and dimensions. You may continue to adjust the picture settings in the dialog box if necessary, remember to click **Apply** any time you want your changes applied.
7. Click **Close** to close the Graphic Setup window.
8. When you are back at the design window, you can reposition and/or resize the picture interactively by clicking and dragging the image, or by clicking on any of the border handles to resize it.

Review the Picture Settings

If you need to review the settings you established, you can: Double-click on the picture and the program will retrieve the dialog box, right-click on the item and select **Edit Entity**, or find the picture in the **View Entity List** and choose the **Load Item** button.

! If the picture that you insert is large, it may exceed the width of the log page, making its resizing "handles" inaccessible. In this case, you will need to use the dialog box **Position** settings, above, to adjust the size of the picture.

Reposition or Resize the Picture

See Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Inserting Header/Footer Patterns

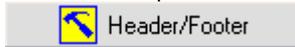
Use: The **Header/Footer Pattern** button is used to insert a square or rectangular block into the log's header or footer, filled with the pattern of your choice. This is typically used to build an index to the patterns that will appear in the body of the log. This is a fixed design item with no corresponding data file commands. This pattern block does not automatically link to any lithologic keywords.

See the Lithology Pattern Column (page 78), Pattern Percent Column (page 105), or Fillbar Column (page 118) for information about plotting patterns in the **body** of the log.

How to...

Insert a Pattern Block into the Log Header or Footer

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



if necessary to display the header/footer design buttons.

3. Select the **Header/Footer Pattern** button  from the Log Designer tool pane. (Or, you can use the menus: Tools / Header/Footer Items / Pattern.)

The pointer will change shape to a "". Now it's time to place the block.

4. Place the cursor where you want the upper-left corner of the pattern block to be, in the header or footer portion of the design screen, and click the left button.

The program will display the Header/Footer Pattern Setup window.

5. Enter the requested settings.

Select: To select the pattern to be displayed in the header or footer block, click on the **Select** button, or just click on the pattern block in the middle of the window. The program will display the Select Pattern window.

To choose a pattern for the block, simply click on one of the displayed patterns. You may use the scroll bars as necessary to view additional patterns. The pattern you have selected will be displayed in the preview box at the top of the window, and its "index number" will be shown in the upper-left part of the window.

To adjust the density at which the pattern is to be displayed in the header block, click on the up- or down-arrow labeled **Density**. The pattern preview will be updated to reflect the density changes. The greater the value, the less dense the pattern.

Select a foreground and background color for the pattern design by clicking on the appropriate color box and making a selection.

Adjust the line thickness for the pattern design by increasing/decreasing the Line Width value.

When you have established the pattern, color, and density to your satisfaction, click on the **OK** button at the bottom of the Select Pattern window. You will be returned to the Header/Footer Pattern Setup window.

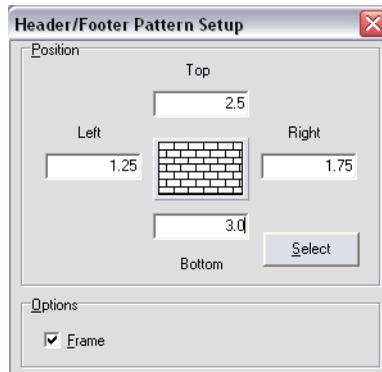
See Viewing and Editing Patterns (page 253) for more information.

Position: Use these settings to determine the placement of the pattern block.

Left, Right: These coordinates determine the horizontal placement of the left & right edges of the pattern block in the header/footer of the log.

Top, Bottom: These coordinates determine the vertical placement of the top and bottom edges of the pattern block.

You may change the block's position by editing these values, or by simply moving or resizing the item on the design screen itself, as discussed below. The horizontal and vertical coordinates are expressed in decimal inches or centimeters relative to the left and top edges of the design screen, respectively.



Frame: If you want the pattern block to be enclosed in a solid-line box, insert a check in this box.

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6. To accept the displayed settings, click the **Apply** button. You will see the pattern block displayed on the screen at the declared location and dimensions, with the selected pattern and colors. You may continue to adjust the pattern block settings in the dialog box if necessary; remember to click **Apply** any time you want your changes applied.
7. Click **Close** to close the Pattern Setup window.

Reposition the Pattern Block

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Review the Pattern Settings

If you need to access the Setup window you can: Double-click on the pattern block, right-click on the item and select **Edit Entity**, or find the pattern block in the **View Entity List** and choose the **Load Item** button.

Inserting Header/Footer Symbols

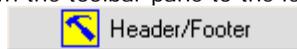
Use: The **Header/Footer Symbol** button is used to insert a symbol of your choice into the log header or footer. This is typically used to build an index to the symbols that will appear in the body of the log. This is a fixed design item with no corresponding data file commands..

See the Symbol Column (page 116) for information about plotting symbols in the **body** of the log.

How to...

Insert a Symbol into the Log Header or Footer

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



if necessary to display the header/footer design buttons.

3. Select the **Header/Footer Pattern** button  from the Log Designer tool pane. (Or, you can use the menus: **Tools / Header/Footer Items / Symbol.**)

The pointer will change shape to a "  " for placing the item.

4. Place the cursor where you wish the upper-left corner of the symbol to be, in the header or footer portion of the design screen, and click the left mouse button.

The program will display the Header/Footer Symbol Setup window.



5. Enter the requested information:

Select: To select the symbol to be displayed in the header or footer, click on the **Select** button in the Header Symbol Setup window. (Or, just click on the symbol picture itself in the window.) The program will display the Select Symbol window. You can select from vector or bitmap symbols.

To choose a vector symbol, click on the **Vector Symbols** tab to bring it to the front. To choose a bitmap symbol, click on the **Bitmap Symbols** tab to bring it to the front. Then simply click on one of the displayed symbols. You may use the scroll bars as necessary to view additional symbols. The symbol you have selected will be displayed in the preview box at the top of the window. The vector symbol's "index number" will be shown in the lower-left part of the window (vector symbols); the bitmap symbol "name" will be shown at the top. Click on the color box to select a color for the vector symbol; click on the foreground and background color boxes to choose those colors for bitmap symbols.

When you have selected the symbol and color, click on the **OK** button at the bottom of the Select Symbol window.

For more information about the process of viewing, selecting, and editing symbols, see Viewing and Editing Symbols (page 257).

Position: Use these settings to determine the placement of the symbol.

Left, Right: These coordinates determine the horizontal placement of the left & right edges of the symbol in the header/footer of the log.

Top, Bottom: These coordinates determine the vertical placement of the top and bottom edges of the symbol.

You may change the symbol's position by editing these values, or by simply moving or resizing the item on the design screen itself, as discussed below. The horizontal and vertical coordinates are expressed in decimal inches or centimeters relative to the left and top edges of the design screen, respectively.

Frame: If you want the symbol to be enclosed in a solid-line box, insert a check in this box.

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6. To accept the displayed settings, click the **Apply** button. You will see the symbol displayed on the screen at the declared location, size, and color. You may continue to adjust the pattern block settings in the dialog box if necessary; remember to click **Apply** any time you want your changes applied.
7. Click **Close** to close the Symbol Setup window.

Reposition the Symbol

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Review the Symbol Settings

If you need to access the Setup window you can: Double-click on the symbol, right-click on the item and select **Edit Entity**, or find the symbol in the **View Entity List** and choose the **Load Item** button.

Adding Static Header/Footer Text

Use: The **Static Text** item is used to plot textual labels in the header or footer portion of the log, specifically text that is constant from log to log. It is frequently used to label columns, list the unchanging logging company name, or to serve as a label for changing text entries (via the **Edit Text** button). It can also be used to insert automatic page numbers, well location information, and the data in the header or footer, using macros.

This is a fixed design item with no corresponding data file commands.

Restrictions: You may include a virtually unlimited number of Static Text items in the header or footer. The Static Text labels can be up to 120 characters in length, including spaces. They can occupy a single line only - wrapping will not occur. If you need multi-line text, see Static Header/Footer Notes (next).

Design file example(s): All of the sample ".LDFX" files that were shipped with the program contain examples of Static Text entries; many of them are used as column labels.

The file "Enviro-geotech4.ldfx" illustrates the use of Static Text items in a slightly different way: as labels for changing "Edit-Text Entries" discussed in another topic. In the excerpt shown below, the labels "PROJECT NUMBER:", "PROJECT NAME:", "LOCATION:", etc. are Static Text items that will remain constant each time this log is compiled with data. The accompanying text "1991-66," "TAC," "OVER THE RAINBOW," etc. are Edit Text items whose text is listed in the data file and may change each time this log format is compiled with new data.

Static Text	FIELD BOREHOLE LOG
PROJECT NUMBER:	1991-66
PROJECT NAME:	TAC
LOCATION:	OVER THE RAINBOW
DRILLING CO:	McEACHRAN & SON
DRILLING METHOD:	AIR ROTARY
FIELD PARTY:	Minden, Hartley
GEOLOGIST:	McEachran
DATE BEGUN:	01/19/96
DATE COMPLETED:	02/14/96

How to...

Add Static Header/Footer Text

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



if necessary to display the header/footer design buttons.

3. Select the **Static Text** button  from the Log Designer tool pane. (Or, you can use the menus: Tools / Header/Footer Items / Static Text.)

The pointer will change shape to "" for marking the desired label position on the design screen.

4. Place the cursor at the intended location in the header or footer for the handle of the label and click the mouse button once. The position of the handle relative to the text label itself depends on the horizontal alignment (left, center, right) and the vertical alignment (top, bottom). See the alignment settings, below.

The program will display the Static Text Setup window.

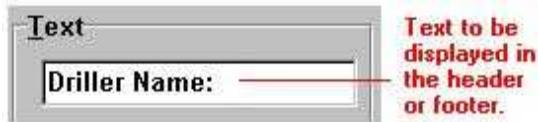
5. Enter the requested text settings:

Position: These coordinates determine the placement of the handle of the Static Text block, in the header or footer of the log. The X coordinate represents the horizontal (left to right) placement, and the Y coordinate the vertical placement in decimal inches or centimeters relative to the top of the header or footer. The defaults reflect the location where the mouse button was clicked (step 2 above). You may change the text placement by editing these values, or by moving the text itself on the design screen. See the alignment settings, below, for information about the position of the handle relative to the text label.

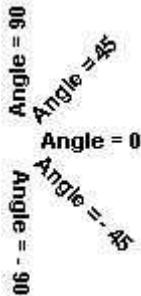
The coordinate units (inches or centimeters) are established under File / Page + Printer Setup.

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Text: Enter the actual text to be displayed in the header or footer of the log. The **Static Text** label may be up to 120 characters in length. (See "Macros," below, for information about automatic plotting of page numbers, well locations, etc.)



Angle: Enter the angle at which the static text label is to be plotted. The text may be plotted at any angle between 90 and -90.



Font: Use this button to access the Font dialog box, where you may set the static text label's font type, size, and color.

Color: Use this button to change the color for the text. This can also be selected using the **Font** button.

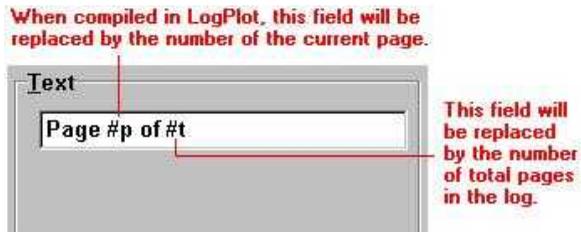
Macros:

To insert the **current page number** and/or **total number of pages** in the header or footer, use the following "hot keys":

#p Inserts the current page number in the text area when compiled in LogPlot.

#t Inserts the total number of pages in the text area when compiled in LogPlot.

You can insert these hot keys as Static Text either alone or together, as well as along with regular text:



On a compiled log, this might look like this:

DEPTH	LITHOLOGY	DESCRIPTION
-16720		ARENACEOUS LIMESTONE
-16730		SHALE
		ANHYDRITE

Page 1 of 2

To insert the **well location** in the header or footer, use these macros:

#x Reads the Easting coordinate defined in the data file's Setup tab, and inserts that coordinate in the text area when the log is compiled.

#y Reads the Northing coordinate defined in the data file's Setup tab, and inserts that coordinate in the text area when the log is compiled.

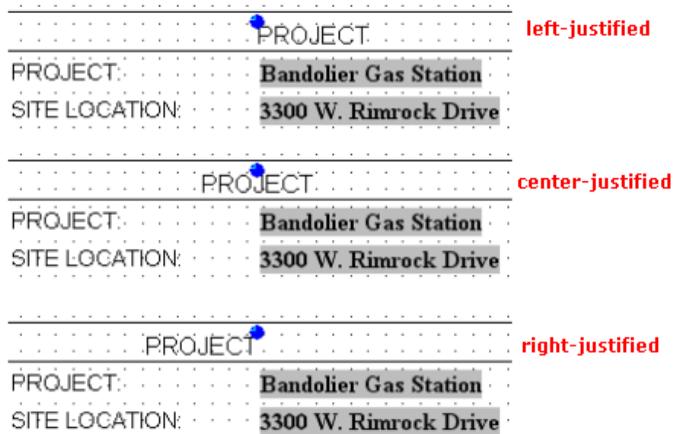
#z Reads the Elevation value defined in the data file's Setup tab, and inserts that value in the text area when the log is compiled.

To insert **today's date** in the header or footer, use this macro:

#d Inserts today's date in the text area when the log is compiled.

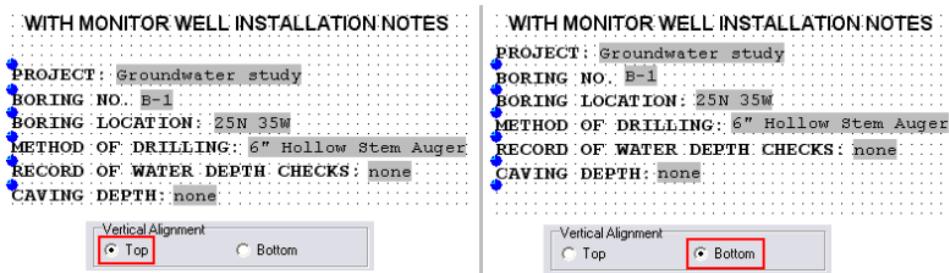
Alignment Settings

Horizontal Alignment: Click in a radio button to choose how the text is to be aligned horizontally relative to the insertion handle. In the graphic example below, the "PROJECT" label is set to Top vertical alignment, and shows the difference between left-, center-, and right-aligned text.



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Vertical Alignment: Click in a radio button to choose how the text is to be aligned vertically relative to the insertion handle. In the examples below, the six Static Text labels are set to Left horizontal alignment, and show the difference between Top and Bottom vertical alignment.



Transparency: Click in a radio button to set the text as *Transparent* (with no background) or *Opaque*. If you select Opaque, click on the color box to choose a color for the background of the text.

6. To accept the displayed information, click the **Apply** button. You will see the text placed in the header or footer in the design window. You may continue to adjust the text if necessary, remember to click **Apply** any time you want your changes applied.
7. To close the Static Text Setup window, click the **Close** button.

The text label you specified will be displayed on the screen at the declared location.

Reposition the Text

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Review the Text Settings

If you need to access the Setup window you can: Double-click on the text item, right-click on the item and select **Edit Entity**, or find the Static Text item in the **View Entity List** and choose the **Load Item** button.

Adding Changing Header/Footer Text



Edit Text

Use: The **Edit Text** button is used to plot textual labels in the header or footer portion of the log. It is used for text such as dates, client company names, and other information **that will change** from log to log, project to project. The actual text that is to be plotted for an Edit Text item is declared in the log **data** file (unlike the Static Text entries with which the text for the label is declared in the log design file).

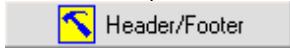
How it works: During compiling, if the LogPlot program finds Edit-Text data entries (page 158), it will look for **Edit Text** items in the log's design that are flagged with the same names. If it finds a match, the label declared for the item in the data file will be plotted in the header or footer of the log at the **Edit Text** location.

Restrictions: You may include a virtually unlimited number of Edit Text items in the header or footer. The Edit Text labels can be up to 120 characters in length, including spaces. They can occupy a single line only - wrapping will not occur. If you need multi-line text, see Header/Footer Edit Notes (page 62).

How to...

Add Changing Header/Footer Text

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



Header/Footer

if necessary to display the header/footer design buttons.

3. Select the **Edit Text** button  from the Log Designer tool pane. (Or, you can use the menus: Tools / Header/Footer Items / Edit Text.)

The pointer will change shape to  for marking the desired **Edit Text** position on the design screen.

4. Place the cursor at the intended location in the header or footer for the handle of the label and click the mouse button once. The position of the handle relative to the text label itself depends on the horizontal alignment (left, center, right) and the vertical alignment (top, bottom). See the alignment settings, below.

The program will display the Edit Text Setup widow.

5. Enter the requested information:

Name: Enter the name for this Edit Text item. Each Edit Text item must have a unique name so that you can refer to each one individually in the data file.



The Name identifies the Edit Text item. Any "EDIT-TEXT" label in the LogPlot data file that is flagged with this same name will be plotted at this location when the log is compiled.

If you have the same Edit Text items on Header 1 and Header 2, or in Footer 1 and Footer 2, they may share the same name, thus requiring only one entry in the LogPlot data file.

Group: The group is used to organize the Edit Text entries into different tabs in the data file. If you don't wish to assign groups simply leave it set to "Default". To create a new group, simply type in the name. To choose an existing group, select it from the drop-down list.

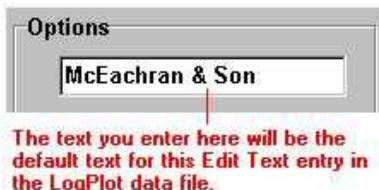
Position: These coordinates determine the placement of the handle of the Edit Text block, in the header or footer of the log. The X coordinate represents the horizontal (left to right) placement, and the Y coordinate the vertical placement in inches or centimeters relative to the top of the header or footer. The defaults reflect the location where the mouse button was clicked (step 2 above). You may change the text placement by editing

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these values, or by moving the text itself on the design screen using your mouse. See the alignment settings, below, for information about the position of the handle relative to the text label.

The units (inches or cms) are defined in the **File / Page + Printer Setup** window.

Text: Enter the text to be used as **default** for this Edit Text entry.

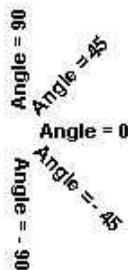


The default text serves two purposes:

As a placeholder in the design window: In this example, “McEachran & Son” will be displayed for this Edit Text field in the log design screen. If the default text is typical of the length of the data you'll usually enter, it's helpful for knowing how much space the text will occupy when the log is compiled.

As default text in the data template: If you use the **Create Data File Template** command to create a new data file for your log design, the program will suggest this text as the text to be plotted. You may change the default entry as necessary.

Angle: Enter the angle at which the Edit Text label is to be plotted. The text angle may be any integer between -90 and 90.

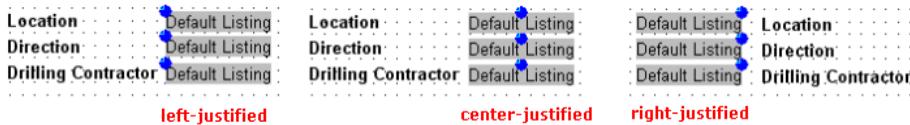


Font: Use this button to access the Font dialog box, where you may set the Edit Text label's font type, color, and size.

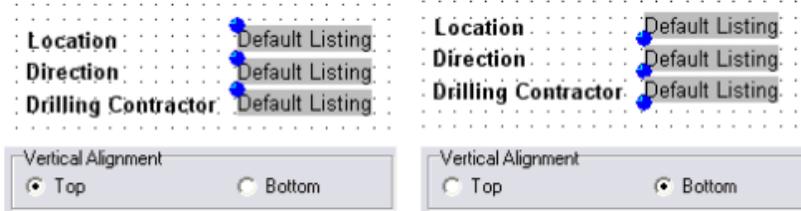
Color: Use this button to select a color for the text. This can also be established using the **Font** button.

Alignment Settings

Horizontal Alignment: Click in a radio button to choose how the text is to be aligned horizontally relative to the insertion handle. In the graphic examples below, the Edit-Text labels are set to Top vertical alignment; they show the difference between left-, center-, and right-aligned text.



Vertical Alignment: Click in a radio button to choose how the text is to be aligned vertically relative to the insertion handle. In the examples below, the six Static Text labels are set to Left horizontal alignment, and show the difference between Top and Bottom vertical alignment.



Transparency: Click in a radio button to set the text as **Transparent** (with no background) or **Opaque**. If you select Opaque, click on the color box to choose a color for the background of the text.

6. To accept the displayed information, click the **Apply** button. You will see the text placed in the header or footer in the design window. You may continue to adjust the text if necessary, remember to click **Apply** any time you want your changes applied.
7. To close the Edit Text Setup window, click the **Close** button.

The text label you specified will be displayed on the screen at the declared location.

Reposition the Text

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Review the Text Settings

If you need to access the Setup window you can: Double-click on the text item, right-click on the item and select **Edit Entity**, or find the text item in the **View Entity List** and choose the **Load Item** button.

Adding Static Header/Footer Notes

Use: The Header/Footer Static Notes item displays multi-line, wrapping text in the log header or footer. The text to be plotted is entered into the log design, for text that won't change from log to log (such as company names and addresses, or column headings). You might think of Static Notes as expanded Static Text labels. If you want to enter the Notes text in the [data file](#), for text that will change from log to log, use the Edit Notes item.

This is a fixed design item with no corresponding data file commands.

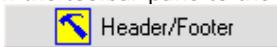
How to...

Add static header/footer notes

1. Access the Log Designer window.

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2. In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



if necessary to display the header/footer design buttons.

3. Select the Static Note button  from the Log Designer tool pane. (Or, you can use the menus: **Tools / Header/Footer Items / Static Note.**)



The pointer will change shape to "" for marking the desired note position on the design screen.

4. Place the cursor at the intended location in the header or footer for the upper-left corner of the notes block and click the left mouse button once. The program will display the Note Setup window.
5. Enter the requested text settings:

Position: These coordinates determine the placement of the edges of the note block in the header or footer of the log. The X coordinate represents the horizontal (left to right) placement, and the Y coordinate the vertical placement in decimal inches or centimeters relative to the top of the header or footer. The defaults reflect the location where the mouse button was clicked (step 4 above). You may change the text placement by editing these values, or by moving/resizing the block itself on the design screen (usually easier, for notes).

The units of the X and Y coordinates are established under File / Page + Printer Setup.

Margin: These settings define the top, bottom, left and right margins within the Static Notes block. They are defined in decimal inches or centimeters (the same units and the *Position* coordinates).

Text: Enter the actual text to be displayed in the header or footer of the log. You will

likely press the  button in order to enter more lengthy text into the displayed pop-up window. You can resize the pop-up window if necessary by "grabbing" and dragging the window's lower-left corner.

There is no limit to the number of characters in the Notes field, other than the available space in the header or footer in the log.

Macros:

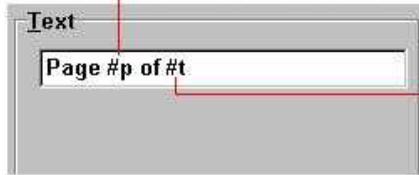
To insert the **current page number** and/or **total number of pages** in the header or footer, use the following "macros":

#p Inserts the current page number in the text area when compiled in LogPlot.

#t Inserts the total number of pages in the text area when compiled in LogPlot.

You can insert these macros as Static Notes either alone or together, as well as along with regular text:

When compiled in LogPlot, this field will be replaced by the number of the current page.



This field will be replaced by the number of total pages in the log.

On a compiled log, this might look like this:

DEPTH	LITHOLOGY	DESCRIPTION
		Page 1 of 2
-16720		ARENACEOUS LIMESTONE
-16730		SHALE
		ANHYDRITE

To insert the **well location** in the header or footer, use these macros:

#x Reads the Easting coordinate defined in the data file's Setup tab, and inserts that coordinate in the text area when the log is compiled.

#y Reads the Northing coordinate defined in the data file's Setup tab, and inserts that coordinate in the text area when the log is compiled.

#z Reads the Elevation value defined in the data file's Setup tab, and inserts that value in the text area when the log is compiled.

To insert **today's date** in the header or footer, use this macro:

#d Inserts today's date in the text area when the log is compiled.

Text Alignment: Click in the Left, Center, or Right radio button to choose the alignment within the defined block.

Font: Use this button to access the Font dialog box, where you may set the Note's font type, size, and color.

Color: Use this button to change the color for the text. This can also be selected using the **Font** button.

Border: If you want the Notes block to be outlined, insert a check in the **Outline** checkbox and choose a line color.

Fill: If you want the Notes block to be filled with color, insert a check in the **Fill** checkbox and choose a fill color.

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6. To accept the displayed information, click the **Apply** button. You will see the text placed in the header or footer in the design window. You may continue to adjust the text if necessary, remember to click **Apply** any time you want your changes applied.

! For the Static Notes block, it's possible that the **Position** settings don't allow enough space to see the text once you've clicked **Apply**; you'll either need to modify the **Position** coordinates or close the Note Setup window to resize the block manually.

7. To close the Note Setup window, click the **Close** button.

Reposition the Notes Block

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Review the Text Settings

If you need to access the Setup window you can: Double-click on the text item, right-click on the item and select **Edit Entity**, or find the Static Notes item in the View Entity List and choose the **Load Item** button.

Adding Editable Header/Footer Notes

Use: The Header/Footer Edit Notes item displays multi-line, wrapping text in the log header or footer. The text to be plotted is entered into the data file, for text that will change from log to log (such as drilling notes, well descriptions, etc.). You might think of Edit Notes as expanded Edit Text labels. If you want to enter non-changing notes, use the Static Notes item.

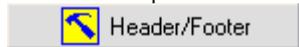
How it works: When LogPlot compiles your data into the log design, it will look in the data file for a Notes tab (page 157) with the same name as the Edit-Notes item in the design. If it finds a match, then the Notes in the data file will be plotted in the designated location. If it does not find a Notes tab in the data file, no text will be displayed (though the notes block itself will if outlined with a border or filled with a solid color).

Restrictions: There's no limit to the number of Notes entities you can include in your log design. Each Notes item can be comprised of up to 2000 characters in length, including spaces.

How to...

Add editable header/footer notes

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Header/Footer Tool Button



if necessary to display the header/footer design buttons.

3. Select the **Edit Notes** button  from the Log Designer tool pane. (Or, you can use the menus: Tools / Header/Footer Items / Edit Note.)

The pointer will change shape to  for marking the desired note position on the design screen.

4. Place the cursor at the intended location in the header or footer for the upper-left corner of the notes block and click the left mouse button once. The program will display the Note Setup window.

5. Enter the requested text settings:

Name: Enter the name for this Edit Note item. Each Edit Note item must have a unique name so that you can refer to each one individually in the data file. For example, you might name an Edit Note item that will contain driller's notes, "Driller Notes."

Position: These coordinates determine the placement of the edges of the note block in the header or footer of the log. The X coordinate represents the horizontal (left to right) placement, and the Y coordinate the vertical placement in decimal inches or centimeters relative to the top of the header or footer. The defaults reflect the location where the mouse button was clicked (step 4 above). You may change the text placement by editing these values, or by moving/resizing the block itself on the design screen (usually easier, for Notes). Units (inches or centimeters) are declared under the File / Page + Print Setup option.

Margin: These settings define the top, bottom, left and right margins within the Notes block. They are defined in decimal inches or centimeters (the same units and the **Position** coordinates).

Text: Enter the text to be used as **default** for this Edit Notes entry. You will likely press the  button in order to enter more lengthy text into the displayed pop-up window. You can resize the pop-up window if necessary by "grabbing" and dragging the window's lower-left corner. There is no limit to the number of characters in the Notes field.

What is "default" text? The text you enter will be displayed for this Notes field in the log design screen. In addition, when you use the **Update Data Template from Log Design** or **Create New Data Template** commands, the program will suggest this text as the text to be plotted. You may change the default entry as necessary.

The default text serves two purposes:

- As a placeholder in the design window: by actually entering a textual note as you might in your data file, you'll be able to see how much space the text will occupy with the log is compiled.
- As default text in the data template: If you use the **Create Data File Template** command to create a new data file for your log design, the program will suggest this text as the text to be plotted. You may change the default entry as necessary.

Text Alignment: Click in the Left, Center, or Right radio button to choose the alignment within the defined block.

Font: Use this button to access the Font dialog box, where you may set the Note's font type, size, and color.

Color: Use this button to change the color for the text. This can also be selected using the **Font** button.

Border: If you want the Notes block to be outlined, insert a check in the **Outline** checkbox and choose a line color.

Fill: If you want the Notes block to be filled with color, insert a check in the **Fill** checkbox and choose a fill color.

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- To accept the displayed information, click the **Apply** button. You will see the text placed in the header or footer in the design window. You may continue to adjust the text if necessary, remember to click **Apply** any time you want your changes applied.
! For the Notes block, it's possible that the **Position** settings don't allow enough space to see the text once you've clicked **Apply**; you'll either need to modify the **Position** coordinates or close the Note Setup window to resize the block manually.
- To close the Note Setup window, click the **Close** button.

Reposition the Notes Block

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Review the Text Settings

If you need to access the Setup window you can: Double-click on the text item, right-click on the item and select **Edit Entity**, or find the notes item in the **View Entity List** and choose the **Load Item** button.

Adding Header/Footer Curve & Bar Graph Column Legends

Use: The Header/Footer Column Legend item is used to display column headings, value ranges and graphic samples for curve or bargraph columns. This is an automatic way to link header and footer text to quantitative columns in the log body for display of value ranges and line styles/colors.

This is a design item that links to Curve, Multi-Curve or Bargraph columns in the log design. It does not link to data fields.

How to...

Add curve/bar graph column legends:

- Access the Log Designer window.
- In the toolbar pane to the left of the design window, click the Header/Footer Tool Button  Header/Footer if necessary to display the header/footer design buttons.
- Select the **Legend** button  from the Log Designer tool pane. (Or, you can use the menus: Tools / Header/Footer Items / Curve/Bargraph Legend.)

The pointer will change shape to " " for marking the legend position on the design screen.

- Place the cursor at the intended location in the header or footer for the upper-left corner of the legend block and click and hold the left mouse button. Keep the mouse button down as you drag down and to the right, drawing a rectangular area within which the legend will be placed. The program will display the Legend Setup window.
- Enter the requested text settings:

Main tab:

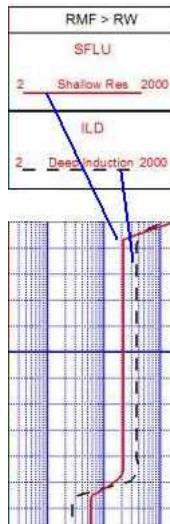
Curve/Bargraph: Click on the down-arrow button to select the name of the Curve or Bargraph column in the current design to which this legend is to be linked. The legend must be linked to a Curve or Bargraph column in order to be able to poll the data ranges and display colors and styles.

Position: These coordinates determine the placement of the edges of the legend block in the header or footer of the log. The X coordinate represents the horizontal (left to right) placement, and the Y coordinate the vertical placement in decimal inches or centimeters relative to the top of the header or footer. The defaults reflect the location where the block was drawn (step 4 above). You may change the legend placement by editing these values, or by moving/resizing the block itself on the design screen (often easier). Units (inches or centimeters) are declared under the File / Page + Print Setup option.

Outline: Insert a check here to display a solid line border around the legend.

Fill: Insert a check here to fill the legend block with a color, and choose the color from the color box.

Plot Graphic: Insert a check here to display a sample of the curve line style and color, or the bar graph color in the legend, as shown below.



Titles tab:

Primary Title: This generally defaults to the name of the curve or bar graph selected on the Main tab. You can type in the desired text for the legend title. Click the **Font** button to choose a font type, style, and size. Use the **Color** button to choose the color for the text.

Secondary Title: This generally defaults blank. You can type in any text to appear as a label below the Primary title. Click the **Font** button to choose a font type, style, and size, and click the **Color** button to choose the text color.

Min/Max Titles: These will be placed below the main titles, and will represent the left- and right-edge values of the column to which this legend is linked. For example, if the legend is linked to a curve column set up with a minimum value of 0 along the left and a maximum value of 100 along the right, then the **Min/Max Titles** will print "0" along the left edge of the legend, and "100" along the right edge. Click the **Font** button to choose a font type, style, and size. Use the **Color** button to choose the color for the text.

Designing Your Logs

- To accept the displayed information, click the **Apply** button. You will see the legend text and graphic placed in the header or footer in the design window. You may continue to adjust the settings if necessary, remember to click **Apply** any time you want your changes applied.
- To close the Legend Options window, click the **Close** button.

Reposition the Legend

See: Move or Resize Header/Footer Items (page 38) for information about dragging, resizing, and aligning items.

Review the Settings

If you need to access the Setup window you can: Double-click on the legend item, right-click on the item and select **Edit Entity**, or find the legend item in the **View Entity List** and choose the **Edit** button.

Listing Log Entities

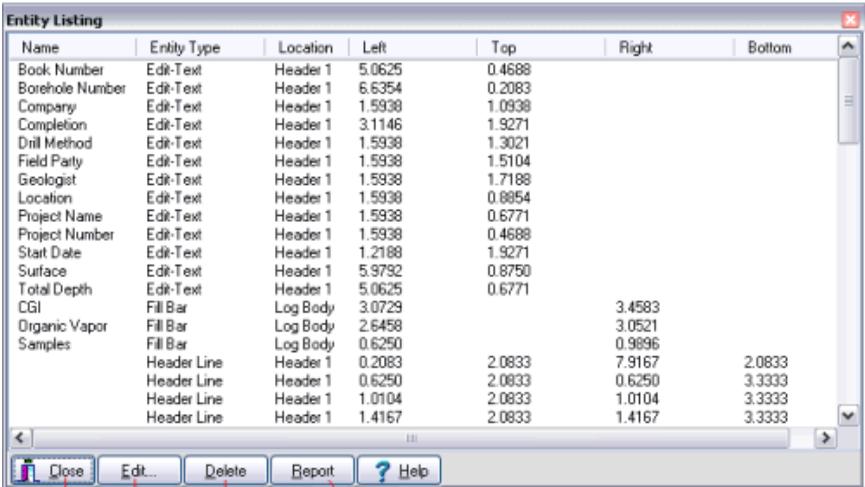
The Log Designer permits you to view a listing of all of the items that are currently included in the open log design:

- Select the **View Entity List** button from Log Designer's left-hand toolbar , or the same command from the **Edit** menu.

The program will display a window that looks like this:

Each item that you've inserted into the log design - header, footer, & body items - will be listed here.

Click on any column heading to sort the list by that column.



Name	Entity Type	Location	Left	Top	Right	Bottom
Book Number	Edit-Text	Header 1	5.0625	0.4688		
Borehole Number	Edit-Text	Header 1	6.6354	0.2083		
Company	Edit-Text	Header 1	1.5938	1.0938		
Completion	Edit-Text	Header 1	3.1146	1.9271		
Drill Method	Edit-Text	Header 1	1.5938	1.3021		
Field Party	Edit-Text	Header 1	1.5938	1.5104		
Geologist	Edit-Text	Header 1	1.5938	1.7188		
Location	Edit-Text	Header 1	1.5938	0.8854		
Project Name	Edit-Text	Header 1	1.5938	0.6771		
Project Number	Edit-Text	Header 1	1.5938	0.4688		
Start Date	Edit-Text	Header 1	1.2188	1.9271		
Surface	Edit-Text	Header 1	5.9792	0.8750		
Total Depth	Edit-Text	Header 1	5.0625	0.6771		
CGI	Fill Bar	Log Body	3.0729		3.4583	
Organic Vapor	Fill Bar	Log Body	2.6458		3.0521	
Samples	Fill Bar	Log Body	0.6250		0.9896	
	Header Line	Header 1	0.2083	2.0833	7.9167	2.0833
	Header Line	Header 1	0.6250	2.0833	0.6250	3.3333
	Header Line	Header 1	1.0104	2.0833	1.0104	3.3333
	Header Line	Header 1	1.4167	2.0833	1.4167	3.3333

Closes the Entity List

Deletes the highlighted item

Creates a CSV report of the Entity List

Accesses the Options window of the highlighted item

How to...**View the Current List of Log Entities**

1. With the Entity Listing window displayed on the screen, use the scroll bar on the right side of the list box, if necessary, to see the current list.

The items are initially sorted by their Name field. You can sort on a different column simply by clicking on that column heading. Some examples:

- You can see a listing of all Curve entities by clicking on the **Entity Type** column heading.
- You can see a listing of all of the items in Header 2 by clicking on the **Location** column heading.
- You can see a listing of all of the items along the left edge of the design by clicking on the **Left** column heading.

2. Choose the **Close** button to return to the Log Designer screen.

View/Modify the Settings for the Currently Selected Item

1. With the Entity Listing window displayed on the screen, use your mouse to select an item within the entity listing. When selected, the item will appear in highlighted colors.
2. Select the **Edit** button to see the settings for the currently-highlighted item.
3. Make any changes to the settings that you wish to make, and click the **Apply** button to apply the changes.
4. Click the **Close** button to close the item's Setup dialog box.

You will be returned to the Entity List window.

Delete the Currently Selected Item

1. With the Entity Listing window displayed on the screen, use your mouse to select an item within the entity listing; it will appear in highlighted colors.
2. Select the **Delete** button to remove it from the log design entirely.

! This operation is not undo-able.

Export the List as a CSV Report

1. Click on the **Report** button. The program will display a standard Windows Save As dialog box.
2. Enter the name under which the comma-separated-variable text file should be saved, such as "entity.csv." The default file name extension is ".CSV".
3. Click **Save**.

The program will save a text listing of the log design entities in a text file of the name you entered, and will load this text file into the default application for this file type on your system (often Microsoft Excel). You'll see a series of columns listing the same information as displayed in the Entity Listing window.

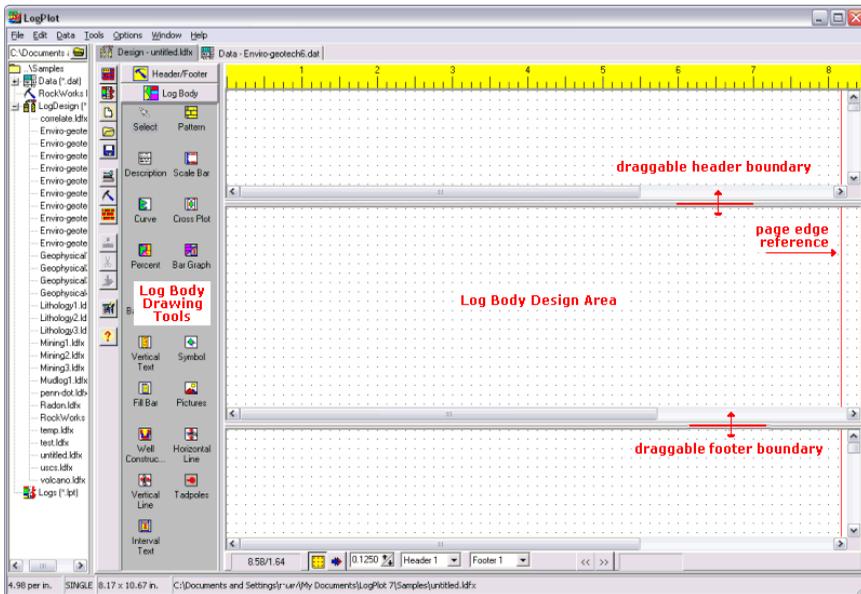
4. From Excel, select the **File / Exit** command to close that application. You will be returned to the Log Designer, with the Entity Listing dialog still displayed on the screen.
5. Choose **Close** to return to the main Log Designer screen.

Designing the Log Body

Log Body Introduction

The body of the log is displayed in the middle portion of the Log Designer screen, and is where the quantitative, descriptive, and other data stored in your data file will get plotted during log compilation in the LogPlot program. Although the log body is a fixed length in the Log Designer, its vertical length on the compiled (graphic) log can be varied by the user by setting a desired vertical scale.

Within the Log Designer work screen, the log body is completely separate from the header and the footer, and has a different set of design buttons.



When you create a new log design (File / New / Log Design command), the program will display a blank design screen. You may then insert a log body item by clicking the appropriate toolbar button and placing the component in the log body section. You may use the displayed ruler for placement reference.

! Items in the log header or footer cannot be moved into the log body and vice-versa.

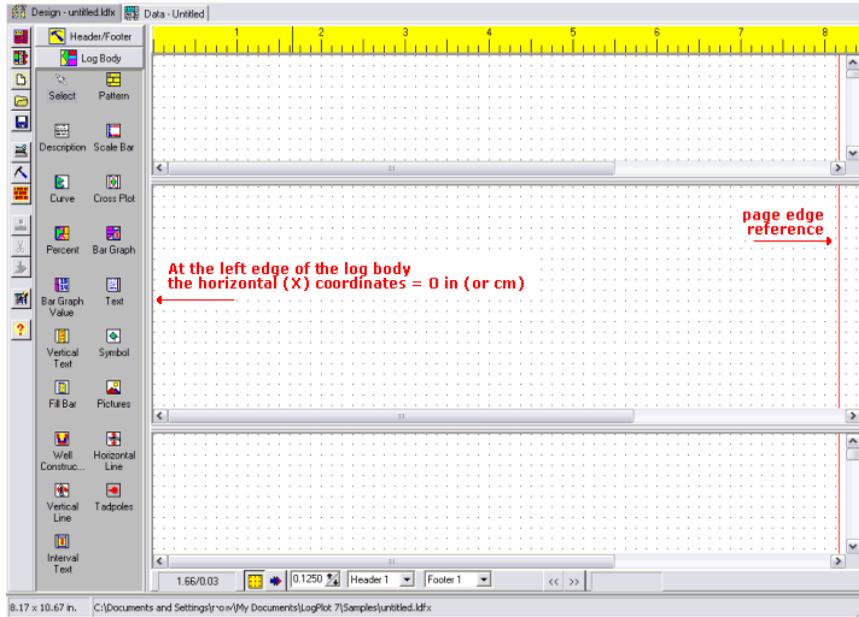
Log Body Coordinates

The placement of any log body item is stored in terms of horizontal inches or centimeters.

! Unlike the log header and footer, the log body items do not have any vertical placement since they will extend the length of the log when it is compiled.

! LogPlot2003 and earlier versions stored placement in screen pixels. The Log Designer will open older design files and automatically translate the pixel coordinates into inches/centimeters for you.

The horizontal coordinates start at 0 along the left edge of the screen and increase to the right in decimal inches or centimeters. The horizontal range of the design page is dependent upon the currently-selected printer, page size, and orientation (established under the **File / Page + Print Setup** command), since a printer with 15" paper will allow more design space (wider logs) than one with 8.5" paper. The paper's right edge will be shown with a red line.



You can turn on a reference grid at a user-defined pixel density to aid you in placing log body items. You can also activate "snapping" of items to that grid.

You can change the units that are displayed in the reference ruler by selecting the Inches versus cm's option in the printer and page settings (File / Page + Print Setup command). If you change the units in the page setup, be sure to re-compute the default page size.

The Reference Grid and Snapping Items

To aid you in placing your design entities, the Log Designer offers a reference grid. If activated, the program will display a grid of dots in the header, footer, and log body portion of the design screen. The resolution of the grid (e.g. spacing of dots in decimal inches or centimeters) can be determined by you.

Designing Your Logs

FIELD BOREHOLE LOG		
PROJECT NUMBER:	1991-66	FIELD BOOK
PROJECT NAME:	TAC	TOTAL DEPT
LOCATION:	OVER THE RAINBOW	GROUND SL
DRILLING CO.:	McEACHRAN & SON	
DRILLING METHOD:	AIR ROTARY	
FIELD PARTY:	Minden, Hartley	Depth (ft)

Reference grid is on at 0.125 in. spacing →   0.1250

FIELD BOREHOLE LOG		
PROJECT NUMBER:	1991-66	FIELD BOOK
PROJECT NAME:	TAC	TOTAL DEPT
LOCATION:	OVER THE RAINBOW	GROUND SL
DRILLING CO.:	McEACHRAN & SON	
DRILLING METHOD:	AIR ROTARY	
FIELD PARTY:	Minden, Hartley	Depth (ft)

Reference grid is off →   0.1250

In addition to the display of the reference grid, you can also activate "snapping" to the grid. If activated, when you place a log design entity in the header, footer, or log body, the program will "snap" the item to the nearest grid point. This can make life a little easier when trying to line up design entities.

Note that you can always override the "snapped" coordinates by entering new coordinates in the item's setup dialog box.

See page 34 for more details.

Selecting Items in the Log Body

How to...

Select a single item in the log body

1. Click on the pointer button on the toolbar: 
2. Use your mouse to position the pointer on the item, and single-click it.

The selected item should appear with "handles" on either end (if it is a line) or on all four corners (all other log body items).

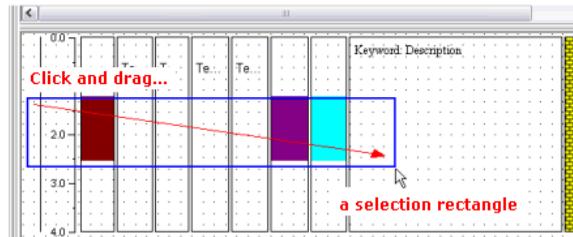
Select multiple items in the log body

1. Click on the pointer button on the toolbar: 
2. Use your mouse to position the pointer on an item and click the left button once.
3. Then, hold the **Ctrl** key down while you select another item. You may continue in this manner to select multiple items.

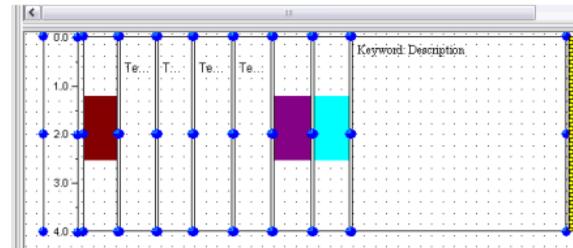
All selected items will appear with "handles" on their corners.

OR

1. Use the screen pointer to "draw" a rectangular region across the log body area. Any items in whole or in part within that bounding rectangle will appear selected (with "handles").



to select multiple log body items



Select all of the items in the log body

1. Use your mouse to click in the log body pane of the design window.
2. Choose the **Edit / Select All in Pane** option.

The program will select all of the items in the pane.

Select an item using the << and >> buttons:

LogPlot offers two buttons at the bottom of the design screen that can advance sequentially through the log entities.



1. Any time that a log design is displayed on the screen, you can click on the forward- or backward-arrow buttons at the bottom of the design screen to advance sequentially through the log entities, changing the highlighted focus of the entities in the order they were added to the log design.

Designing Your Logs

The selected item should appear with "handles" on either end (if it is a line) or on all four corners (all other log body columns).

Use the "Entity List" to access a design item and its settings

1. With a log design displayed on the screen, select the **View / Entity List** command, or click the View Entity List button .

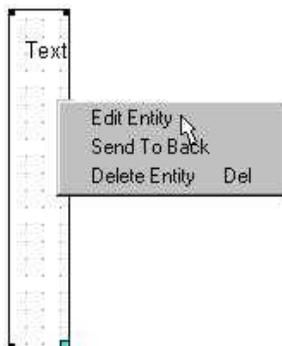
The program will display a listing of all of the items in the current log design.

2. To access a specific item, scroll down the list as necessary until you see it, and left-click once to select it. When selected, it will appear highlighted. (The entities can be listed by name, type, or other parameter.)
3. Click on the **Edit** button to display this item's settings.
4. Edit the settings as you wish, or simply press OK or Cancel to close the settings window.

The item will remain active when you are returned to the design window.

Options

Once an item is selected, you can view or change the item's settings by right-clicking on the item and selecting **Edit Entity**.



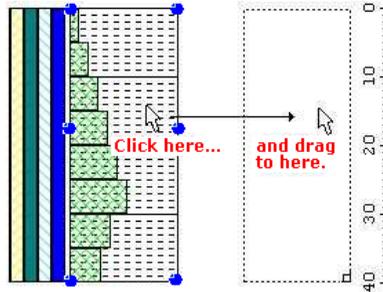
Move or Resize Log Body Items

You can move and resize log body items using several methods:

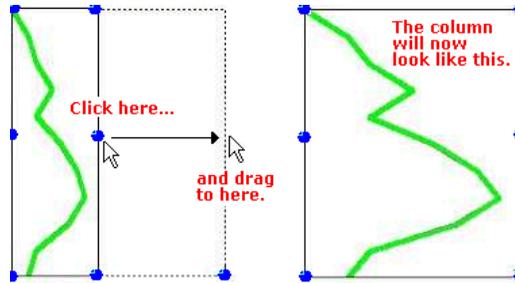
Manually: You can reposition log body items by grabbing (left-click-and-hold) and dragging them on the design screen itself. The program also offers a reference grid and a "snapping" feature to make it easy to line things up. You may select items individually or in groups.

1. Click on the pointer button in the Log Designer toolbar.
2. Click on the item to be moved to select it. It will contain small, round "handles" on each corner (or each end, if a line). To select multiple items, hold down the Ctrl key and click on additional items.

- Keep the mouse button depressed and drag the item to its new location. If you need to move the item just a pixel or two, you can use your keyboard's arrow keys to "nudge" the item left or right



Or, to resize an item, click on the largest handle, located at the lower-right corner or at the end of the line. Keep the mouse button depressed and drag that corner or end point to the new location. Release the mouse button when it is resized as you wish.



Alignment Tools: Use the **Edit** menu's **Align** tools to assist you in getting your log body items arranged.

- Click on the pointer button in the Log Designer toolbar.
- Click on the first of the items to be aligned. This is the "reference" item, to which the other items you choose will be lined up with.
- Hold down the Ctrl key and click on the additional items to be lined up with the first.
- With all of the items selected, click on the **Edit / Align** option you wish to use. (Or, right-click and choose **Align / ...**)

Align Left: Multiple items will be set to the same left (X1) coordinate.

Align Right: Multiple items will be set to the same right (X2) coordinate.

Align / Horizontal Spacing: Items will be spaced evenly from left to right.

Align / Vertical Spacing: Items will be spaced evenly from top down.

Align / Horizontal Snap: Item edges will be aligned, at the "snap margin" that is defined.

Remember, alignment will occur based on the first item selected.

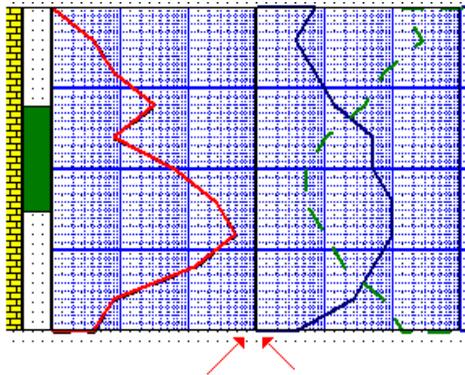
Dialog box: Each log body item has characteristics that can be set via a dialog box. Within the dialog box, there are “coordinate” edit boxes that display the current horizontal coordinates for the item. You may change the placement of the item by editing these coordinates. You can also use the dialog box to change font type and sizes for text items, line styles, etc.

1. Click on the pointer button  in the Designer toolbar.
2. Double-click on the item to display its dialog box. (Or, right-click on the item, and select **Edit Entity**.) (Or, double-click on the item in the **Edit / View Entity List** screen.)
3. Edit the x coordinates for the item.
4. Click the **Apply** button to see the effect of the position change.
5. Click **Close** to close the Settings window and return to the design screen.

It is typically easier to use the manual method since it involves working right on the design screen, and you can see what you are doing. And, with the reference grid and snapping features, it's easy to line things up.

However, you might find it valuable to use dialog box coordinates if you need to align items at a resolution different than that of the snapping grid.

For example, if you have two log body columns that you want to line up right next to each other, you could use each item's dialog box to set the horizontal (x) coordinate to the same value for their shared sides.



The right edge of this column and the left edge of this share the same horizontal coordinate.

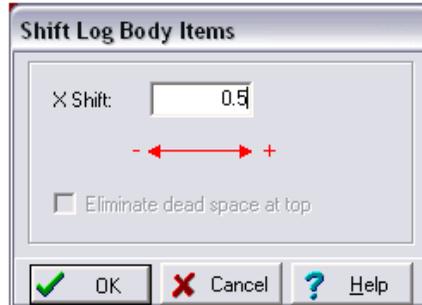
Shifting Log Body Items

To shift all of the items in the log body by the same amount to the left or to the right, follow these steps:

1. Select the **Shift Body Items** command from the **Edit** menu.

The program will display this dialog box:

X-shift is entered in decimal inches or centimeters. Positive values will shift items to the right, and negative values will shift items to the left.



2. Enter the X (horizontal) shift, in decimal inches or centimeters, for *all* of the log body items. You might use this shift-all tool to move items to the right to increase your left page margin, for example.
3. Choose **OK** to move the log body items the indicated amount, or choose **Cancel** to cancel the operation.

Remember that the horizontal range of the log design depends on the default printer and page size (**File** menu / **Page + Print Setup** command).

The **Shift Body Items** command is not affected by any snapping settings you may have established.

Cut-paste or copy-paste log body items

To "cut" or "copy" items in the log body and then paste them, follow these steps:

1. Click on the item(s) in the log body to be cut or copied. It should appear with "handles" on either end (if it is a line) or on all four corners (all other body columns). (See Selecting Items in the Log Body, page 70, for details.)
2.  If you wish to *remove* the selected item(s), click on the **Cut** toolbar button or select the **Cut** command from the **Edit** menu. The item(s) will be removed from the design and placed in the Log Designer clipboard.
3.  If you wish to *make a copy* of the selected item(s), click on the **Copy** toolbar button (above) or select the **Copy** command from the **Edit** menu. The item(s) will remain in the design and a copy will be placed in the Log Designer clipboard.
3.  Paste the cut or copied item(s) into the log body by choosing the **Paste** command from the **Edit** menu, or by clicking on the **Paste** toolbar button, shown above. Log Designer will insert the item(s).
5. If you pasted a single item, the program will display its dialog box for confirmation of coordinates and/or entity name. If necessary, edit the entity name, and/or the positioning coordinates for the item.
6. Click on the **Apply** button to accept any changes you have made to the item's settings, and press **Close** to close the dialog box.

Designing Your Logs

7. You can also reposition items within the log body by dragging them to the desired location.

Log Body Scaling

Vertical: As you design the body portion of your log, the components will be shown at a fixed size vertically. However, when you compile your data into the log design in the LogPlot program, you may vary the vertical scale in the **Options / Log Settings** dialog box. The body of your log may extend over several pages.

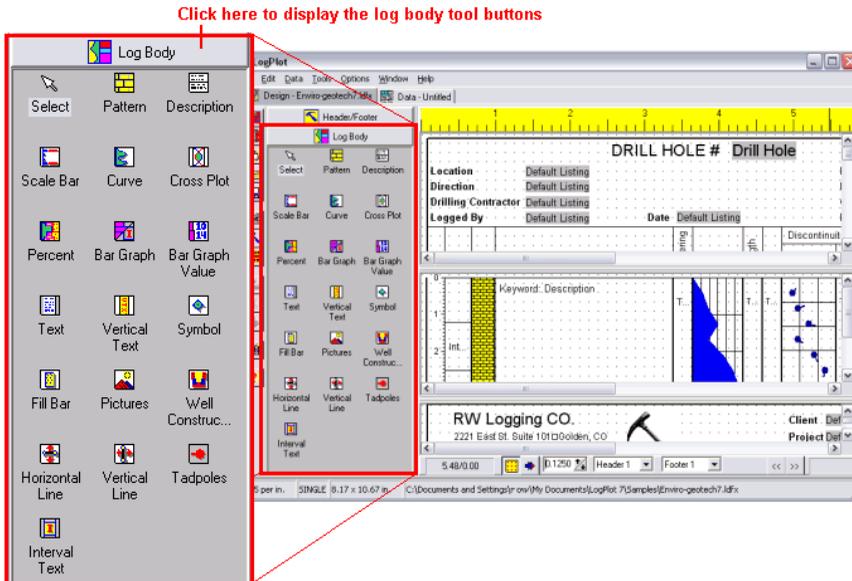
Horizontal: Changing the horizontal size of a log body item is done by “stretching” or “shrinking” the item on the design screen itself, or by changing the item’s coordinates in its dialog box.

The horizontal limits to the log’s design is determined by the printer and page size you have selected (**File / Page + Print Setup**).

Log Body Items

Log Body Item Summary

Here is a summary of the items that you can include in the body of your log. The tool buttons are found on the Log Designer tool pane, to the left of the program window, and can also be accessed in the **Tools** menu. These items are discussed in the remainder of this section.



 **Lithology Pattern Column** - Contains graphic patterns that are associated with keyword declarations. The column would typically represent lithology type, but could also contain mineralization, fossilization, and other patterns.

 **Lithology Description Column** - Contains textual descriptions that are listed in your data file on a Lithology tab. The patterns for the declared description keywords will be plotted in the associated Lithology Pattern Column, if any.

 **Scale Bar** - Notes depths or elevations down the log.

 **Curve Column** - Plots quantitative data as a point-to-point curve (line, symbol, filled, block, etc.)

 **Cross Plot Curve Column** - Plots two sets of curve data, with overlapped regions filled with pattern and/or color.

 **Pattern % Column** - Displays up to 20 lithology patterns in a column, based on component percentages.

 **Bar Graph Column** - Plots interval-based quantitative data as a bar graph.

 **Bar Graph Value Column** - Plots value labels next to/overlying a Bar Graph column.

 **Text Column** - Plots text that is not associated with a lithologic pattern. This could include sample numbers, soil classifications, general comments, etc.

 **Vertical Text Column** - Plots text vertically in the body of the log, between user-declared depths. This is commonly used to indicate stratigraphic or geologic age groupings.

 **Symbol Column** - Plots specific symbols, such as water level, at user-declared depths.

 **Fillbar Column** - Fills user-declared intervals with a specific pattern, often used to note core samples or qualitative information ("good porosity", etc.).

 **Bitmap Column** - Plots raster images (BMP, TIFF, JPG, WMF, EMF, PCX, PNG, TGA) pictures in the body of the log.

 **Well Construction Column** - Illustrates the structure of the construction materials in the body of the log.

 **Horizontal Log Body Line** - Plots horizontal lines across a portion of or the entire log, at user-declared depths and/or at regular depth intervals.

 **Vertical Log Body Lines** - The Line button is used simply to plot a vertical line anywhere on the body of the log.

 **Tadpole Column** - Displays structural readings (azimuth and dip) with tadpole symbols in the body of the log.

 **Interval Text Column** - Displays text, defined within a depth interval, within the column. Text can be centered within the interval, with intervals bounded by borders.

See also: Viewing a List of the Log Entities (page 66.).

Adding a Lithology Pattern Column

Use: A Lithology Pattern Column is designed to contain graphic patterns that are associated with keyword declarations. The patterns can also be clipped based on hardness or other values in a curve column, resulting in a lithology profile.

How it works: As the LogPlot program compiles your data file, it will locate keywords listed in a Lithology data tab, scan the "keyword table" for these keywords and, if found, plot the associated *pattern* for that interval in the Lithology Pattern Column that has the same name. The text *descriptions* themselves will be plotted in the Lithology Description Column on the log.

There can also be an associated data tab for displaying interbedded patterns in this column.

! It is *not* required that each Lithology Pattern Column have an associated Description Column.

Data Tab: Lithology patterns are linked to data entered into a Lithology tab (page 166) or Interbed tab (page 162).

How to...

Create a Lithology Pattern Column in a log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

3. Select the **Lithology Pattern Column** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Lithology Pattern Column.)

The pointer will change shape to a . Now it's time to place the column on the design screen.

4. Place the lithology cursor where you wish to position the column's left edge and click the left mouse button.
5. Enter the requested information in the **Main** tab:

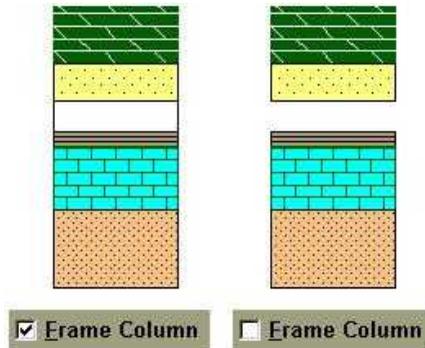
Name: Enter the name for this Lithology Pattern column. Each pattern column item must have a unique name so that you can refer to each one individually in the data file. The name can be up to 60 characters in length, including spaces.



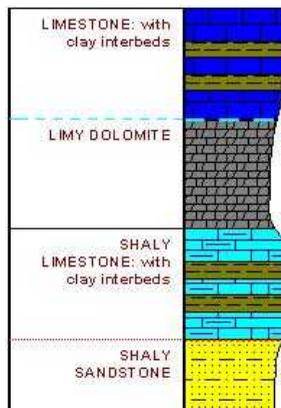
The NAME identifies the lithology pattern column (you may have more than one) AND matches it with its associated Lithology Description column, if any.

Position: These coordinates determine the horizontal placement of the Lithology Pattern column in the body of the log. You may change the column's position by editing these values, or by moving or resizing the column on the design screen itself. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen.

Frame Column: If this setting is activated (with a check-mark) the program will enclose the column in a solid line frame. This will probably only be noticeable in areas where no lithologic patterns are displayed.



- Click on the **Profile Curve** tab in the window if you want to use curve values to create a lithology profile.



Use a Curve to Create a Profile: Insert a check in this box to activate this feature and enable the additional settings.

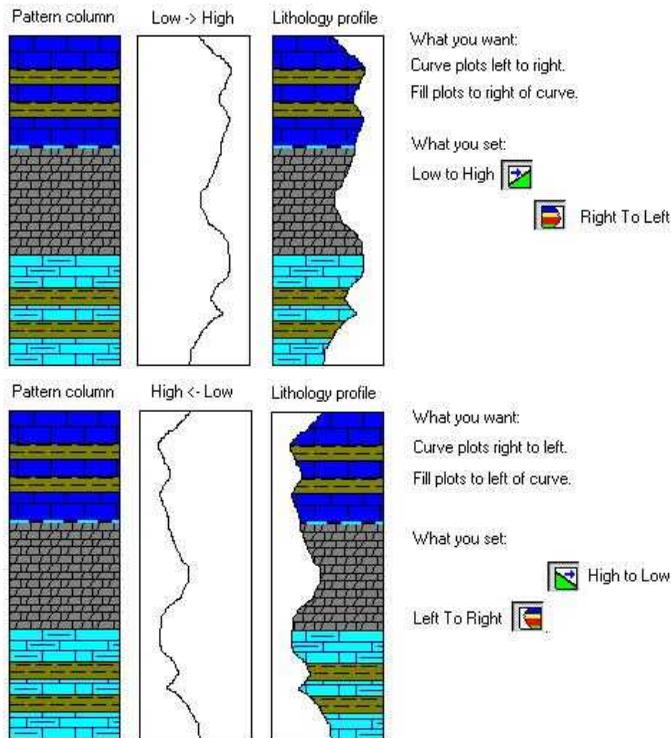
Curve Name: Type here the name of the Curve data tab in the data file, or the name of the column in the Multi-Curve tab in the data file, that contains the data to be used to mask the lithology column. For example, if you wish to clip the patterns based on hardness, and you have those values stored in a Curve data column named "Hardness", this is the name you would type into the Curve Name field.

Min Value, Max Value: Here, type in the minimum and maximum curve values to be associated with the edges of the lithology column. For example, if your curve data representing hardness ranges from 40 to 80, you could set the **Min Value** to 40 and the **Max Value** to 80. Or, if you wanted to show this curve at less exaggeration, you could set the **Min Value** to 0 and the **Max Value** to 80.

Low to High, High to Low: These buttons determine the direction in which the curve's values will plot. Click on the left hand button (Low to High) if the low curve values are to correspond to the left edge and the high values to the right edge of the Lithology Pattern column. Click on the right-hand button (High to Low) to if the high curve values are to correspond to the left edge and the low values to the right edge of the pattern column.

Left to Right, Right to Left: These buttons determine the direction in which the opaque fill will plot. Click on the left button (**Left to Right**) to fill the region on the left side of the curve line with white. Click on the right button (**Right to Left**) to fill the region on the right side of the curve line with white.

Here are some examples of button combinations:



- To accept the displayed information, click the **Apply** button. You will see the Lithology Pattern column placed in the design screen filled with a brick pattern. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
- To close the Lithology Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Setup window you can: Double-click on the lithology pattern column, right-click on the item and select **Edit Entity**, or find the Lithology item in the **View Entity List** and choose the **Edit** button.

Adding a Lithology Description Column

Use: A Lithology Description Column is designed to contain textual descriptions that are listed in a Lithology tab in your data file. The patterns for any declared description keywords will be plotted in the associated Lithology Pattern Column, if any.

How it works: As the LogPlot program compiles your data file, it will look for keywords and descriptions entered into a Lithology data tab. It will plot the text in the Lithology Description Column that has the same name. You can request that various combinations of keyword and description text be plotted. Other description options include automatic offset of the text upward or downward to use available space, and user-selected line contact line styles. In addition, if there is a Lithology Pattern Column with the same name, it will plot there any associated keyword patterns.

Alternatives: There are a couple of other types of text-related columns you can also choose from:

Text Columns are used to plot general text that is not to be linked with lithology patterns. This text is entered with a single depth only, at the top of the interval, is not bounded by contact lines, and cannot be automatically offset.

Interval Text columns are also used to plot general text that is not linked with lithology patterns. This text is entered with a top and base depth, can be separated by divider lines, and can be centered within the depth interval if desired.

! It is *not* required that each Lithology Description Column have an associated Pattern Column.

LogPlot data tab: Lithology descriptions are linked to data entered into a Lithology tab (page 166).

How to...

Create a Lithology Description Column in a log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

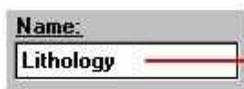
3. Select the **Lithology Description** button from the tool pane . (Or, you can use the menus: **Tools / Log Body Items / Lithology Description Column.**)

The pointer will change shape to a ""; you may now place the column on the design screen.

4. Place the description cursor where you wish to position the column's left edge and click the left mouse button.
5. Enter the requested information:

Designing Your Logs

Name: Enter the name for this Lithology Description Column. Each description column item must have a unique name so that you can refer to each one individually in the data file. The name can be up to 60 characters in length, including spaces.

A screenshot of a software interface. On the left, there is a label 'Name:' above a text input field. The input field contains the word 'Lithology'. A red arrow points from the text 'The NAME identifies the description column...' on the right towards the input field.

The NAME identifies the description column (you may have more than one) AND matches it with its associated Lithology Pattern column, into which the keywords' patterns will be plotted.

! If you want the LogPlot program to link the information in this Description Column with patterns to be plotted in a Lithology Pattern Column, then the two columns must share the same name!

Position: These coordinates determine the horizontal placement of the Lithology Description Column in the body of the log. You can change the column's position by editing these values or by moving or resizing the column on the design screen itself. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen.

Appearance:

Font: Click on this button to access font type, style, size, and color. If, after you compile your data for this log design within LogPlot, you find that the description characters are too large or too small for the given log scale, you may adjust the text font and size via these dialog box items.

Color: Use this button to select a color for the text. This may also be selected using the **Font** button, above.

Horizontal Alignment: Choose Left, Right, or Center for the alignment of the description text within the column.

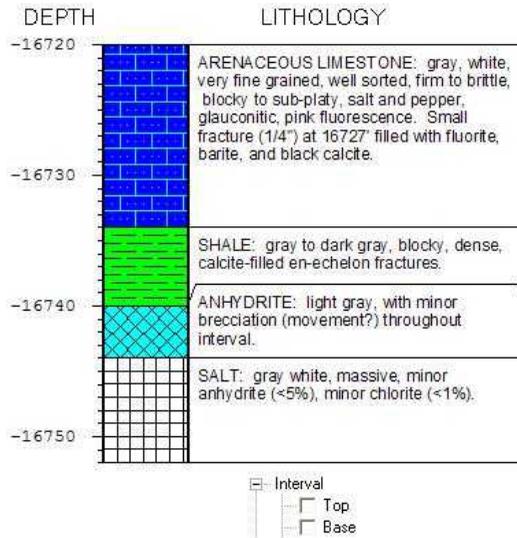
Margin: Type in a margin (in screen pixels) to be enforced along the left, right, upper, and lower edges of the column and interval. You should probably start with 0 and then increase it as necessary.

Interval Decimals: Here you can type, or use the prompt's up- or down-arrows, to define how many decimal places you want displayed for the depth intervals, if you've requested the intervals be plotted (see below). The appropriate number to define will depend on the number of decimal places defined within your actual depth entries in the Lithology data tab. For example, if your lithology depth intervals are entered as integers, you should set this to 0. If your lithology depths are entered to 1 decimal place, you should set this to 1, and so on.

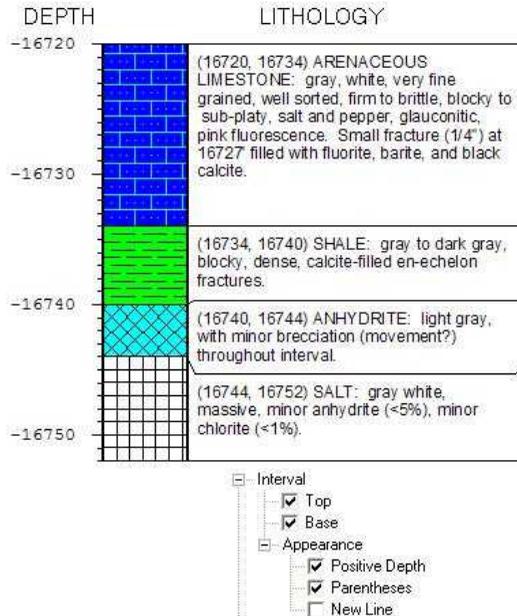
Options:

Note that these options will apply to all of the intervals being plotted in the Lithology Description column.

Interval: Expand this heading to select whether the depth at the top of the interval and/or the depth at the base of the intervals are to be included in the description text. The first example below shows the description text plotted with no depth intervals.



This example illustrates both the top and the base depths displayed, as positive values, within parentheses.



If you turn on either or both of the intervals, you can establish their appearance.

Designing Your Logs

Positive Depth: If your depths are entered as negatives, you can check this box to display the depth intervals as positive values.

Elevations: Check this box if you prefer to display the true elevations for the interval.

Parentheses: Insert a check here to display the intervals inside parentheses, as shown in the example.

New Line: Insert a check here to display the start of the descriptive text on the line below the intervals.

Keyword: Insert a check in this box to plot the keyword that's listed in the Lithology tab. Although the keyword is needed to link a description to a graphic pattern in the Lithology Pattern column, you may omit the plotting of the keyword's text in the description column by clearing this check-box.

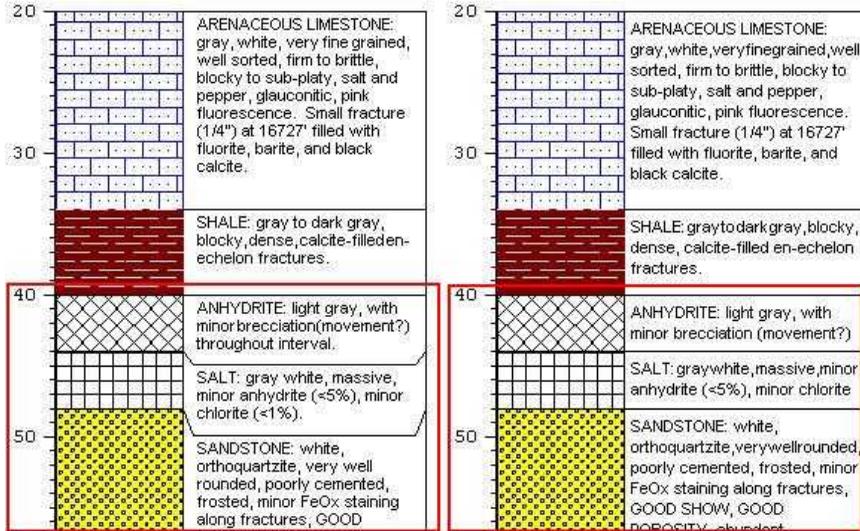
Colon: If you've activated the plotting of the Lithology tab keyword, above, you can select here whether the keyword is to be separated from the extended description, if any, with a colon (":") character. Note that if the colon is activated but there is no extended description for an interval, the colon will be omitted.

	ARENACEOUS LIMESTONE: gray, white, very fine grained, well sorted.		ARENACEOUS LIMESTONE gray, white, very fine grained, well sorted.		gray, white, very fine grained, well sorted.
	SHALE: gray to dark gray, blocky, dense.		SHALE gray to dark gray, blocky, dense.		gray to dark gray, blocky, dense.
	ANHYDRITE: light gray, with minor brecciation throughout interval.		ANHYDRITE light gray, with minor brecciation throughout interval.		light gray, with minor brecciation throughout interval.
	SALT: gray white, massive, minor anhydrite (<5%), minor chlorite (<1%).		SALT gray white, massive, minor anhydrite (<5%), minor chlorite (<1%).		gray white, massive, minor anhydrite (<5%), minor chlorite (<1%).
<input checked="" type="checkbox"/> Keyword <input checked="" type="checkbox"/> Colon (SAND:) <input checked="" type="checkbox"/> Description		<input checked="" type="checkbox"/> Keyword <input type="checkbox"/> Colon (SAND:) <input checked="" type="checkbox"/> Description		<input type="checkbox"/> Keyword <input type="checkbox"/> Colon (SAND:) <input checked="" type="checkbox"/> Description	

Description: Insert a check here to plot any extended text in the Lithology Description column. Omitting this information can be helpful if you want to display a "short" version of your data (e.g, keywords only). Be sure to have **Keyword** (above) turned on if descriptions are turned off.

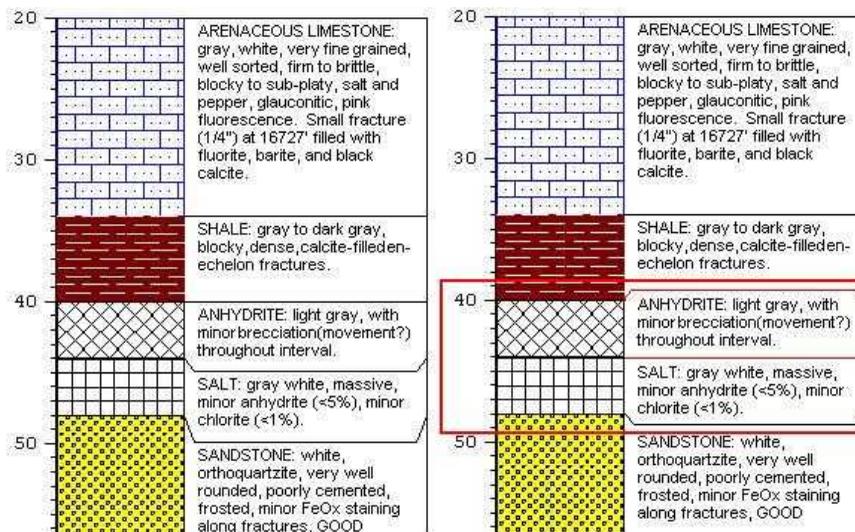
Offset descriptions: Insert a check-mark to activate automatic offsetting of description text. If activated, if a description is too large to fit within its depth interval

when compiled in LogPlot, the program will shift the following descriptions down the log, so that all the text will be visible. In the example below, the log on the left displays how the "Salt" interval is offset downward to make enough room for the Anhydrite text. In the log on the right, the Anhydrite and Salt text blocks are simply clipped because **Offset Description** is turned off.



Move Up: Insert a check in this option to allow offset descriptions to be moved upward, if there is room. This prevents continual downward-offsetting of the text. In the example below, the Anhydrite interval in the log on the right has moved upward to make more room for the text that follows.

Designing Your Logs



Lines:

Column Outline: This option turns on and off a solid-line border around the entire description column.

Interval Dividers: This option is used to turn on and off the lines that are drawn between lithologic description intervals.

- To accept the displayed information, click the **Apply** button. You will see the Lithology Description column placed in the design screen, labeled "LithDesc" in the selected font, color, and size. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
- To close the Description Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Setup window you can: Double-click on the lithology description column, right-click on the item and select **Edit Entity**, or find the Lithology Description item in the **View Entity List** and choose the **Edit** button.

Adding a Depth or Elevation Scale Bar

Use: A Scale Bar is used to note depths or elevations down the log.

How it works: If the Scale Bar is set to **Depths**, the uppermost value on the bar will correspond to the depth at the top of the log (declared in the data file in the Setup tab or in the Compile window). You may choose to have the depths displayed as negative values (if so entered) or you may strip off the negative sign and display their absolute values.

If the Scale Bar is set to **Elevations**, the uppermost value on the bar will correspond to the elevation declared for the well (also declared in the LogPlot data file in the Setup tab). (For more about depths vs. elevations, see page 189.)

If your well is not vertical, you can set the Scale Bar to display true elevations downhole. This is done by linking the Scale Bar to an "Orientation" tab in the data file, which lists the downhole survey depths, orientations, and inclinations.

LogPlot data tab: None, unless you request display of true elevations based on downhole survey, in which case the Scale Bar will link to an Orientation tab (page 174).

How to...

Insert a scale bar in a log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

3. Select the **Scale Bar** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Scale Bar.)

The pointer will change shape to a  for placing the column on the design screen.

4. Place the scale bar cursor where you want to position the scale bar and click the left mouse button.

The program will display the Scale Bar Setup dialog box. It is comprised of three tabs.

5. Enter the general settings on the **Main** tab:

Bar Position: This determines the actual placement of the scale bar; enter or change the horizontal coordinate for the vertical line of the scale bar. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. The placement of the depth/elevation labels relative to the bar is established in the Labels tab, discussed below.

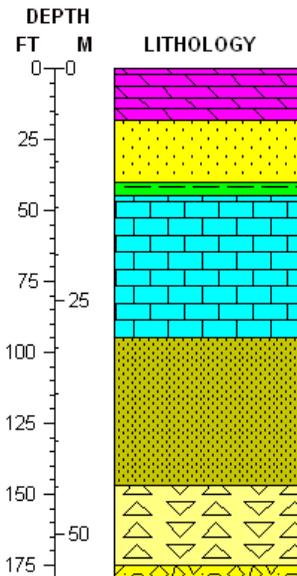
Style: The **Elevation** and **Depth** radio buttons are used to identify what the labels on the scale bar will represent. (Your log data may be entered in either depths or elevations. See page 189 for more information.) If you are displaying depths and if you want to display depths as positive values on the bar, insert a check in the **Positive Values** check-box.

If your well is deviated or inclined, you can elect to have the labels represent downhole **Survey Elevation**.

Orientation data tab name: Type in the name of the tab in the data file that contains the downhole survey information (typically called "Orientation") and specify whether the data is entered as dip from vertical (0 = straight down and 90 = horizontal) or as dip from horizontal (0 = horizontal, -90 = straight down, +90 = straight up, as entered in RockWorks). See the Orientation Tab (page 174) for more information.

Convert: Insert a check in this box if you want the scale bar to convert your depth or elevation units from feet to meters or from meters to feet.

Example: Let's say your data units are feet. You could insert one Scale Bar in the log design with no conversion, and the units would represent feet. You could insert a different Scale Bar with a Feet to Meters conversion, and the labeled units would represent meters. An example is shown below.



6. Enter the label settings on the **Labels** tab in the Scale Bar Options window:

Font: Click on this button to access font settings for the depth or elevation labels.

Color: Click on this box to select the font color. This can also be established in the Font settings, above.

Decimal Places: Enter the number of decimal places to be represented in each depth or elevation label.

Angle: Choose an angle for the labels by clicking in the appropriate radio button.

Position: Choose where the labels are to be placed relative to the scale bar line by clicking in the appropriate radio button. You should double-check how you set up the tick mark position (below) as well. (Label *interval* is established on the Tick Marks tab.)

Adjust vertical position at top and bottom of page: If activated (with a check-mark) LogPlot will nudge the depth/elevation labels down or up slightly if they fall on a page break. This prevents the label from being clipped in half.

7. Enter the tick mark settings on the **Tick Marks** tab:

Major Tick Marks

Increment: Type in the depth or elevation interval at which the large tick marks should be plotted down the log in your downhole units *or in the converted units* if **Convert** is activated (Main tab).

! This will also be the interval for the depth/elevation labels; they are plotted with the major tick-marks.

Tick Size: Type into this prompt the size (length) for the major tick marks, in your design units (decimal inches or centimeters). The default is 0.1.

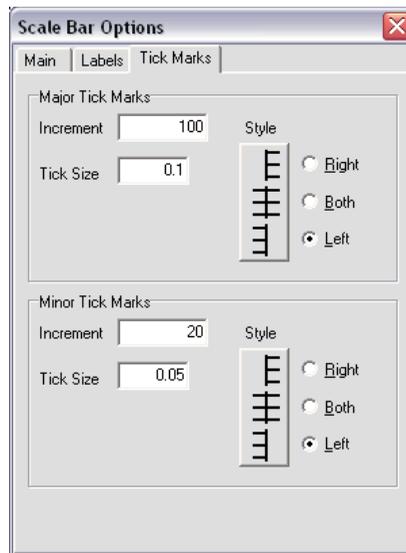
Style: Select the desired style for the major tick marks using the displayed radio buttons. The offset of the labels is established on the **Labels** tab of the Scale Bar Options window (discussed above).

Minor Tick Marks

Increment: Type in the depth or elevation interval at which the small tick marks should be plotted down the log in your downhole units *or in the converted units* if **Convert** is activated (Main tab).

Tick Size: Type into this prompt the size (length) for the minor tick marks, in your design units (decimal inches or centimeters). The default is 0.05.

Style: Select the desired style for the minor ticks using the displayed radio buttons.



In this example, the Major ticks would be plotted every 100 units, and Minor ticks every 20 units. The scale bar labels would be plotted every 100 units with the Major tick marks.

8. To accept the displayed settings, click the **Apply** button. You will see the Scale Bar in the design screen, with the appropriate tick marks, labels, etc. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
9. To close the Scale Bar Options window, click the **Close** button.

Review the Settings

If you need to access the Setup window you can: Double-click on the Scale Bar in the body of the log, right-click on the Scale Bar and select **Edit Entity**, or find the Scale Bar item in the **View Entity List** and choose the **Edit** button.

Adding a Curve Column

Use: A Curve Column is used to plot quantitative data as a point-to-point curve. LogPlot offers a variety of ways to display this curve (filled, with symbols, as a block curve, etc.).

How it works: As you compile your log in LogPlot, the program will locate data listed on a Curve (page 155) or Multi-Curve data tab, and will plot the data in the Curve Column of the same name. For example, data contained in a Curve data tab named "Gamma" would plot into a curve column also named "Gamma".

The data may be plotted from left to right or right to left, linear or logarithmic scale, with or without horizontal or vertical reference grids. You may vary the line color, thickness, and style for the curve. The curves may be filled with a solid color if desired. Curves can "wrap" and can include symbols at the inflection points. You may include automatic value labels at regular intervals down the log. You can overlay any number of Curve Columns on top of each other.

Each Curve Column on the log must have a separate Curve tab in the data file, or a separate column listing within a Multi-Curve tab.

New!

- You can plot specific depth intervals of a single curve at different min-max scales, with a user-defined Scale Table.
- You can request automatic min-max scaling of the column, to match the individual log's data range.

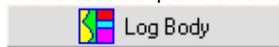
Alternatives: Columns in which two curves are displayed, with solid-fill color where they overlap are designed with the Cross Plot Curves column.

LogPlot data tabs: The data for a Curve Column can be read from a Cross-Plot Curve tab (page 154), a Multi-Curve tab (page 169), or a regular Curve tab (page 155) in the data file. This means that a single curve data listing can be plotted in several places on the log.

How to...

Insert a curve column in a log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

3. Select the **Curve** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Curve Column.)

The pointer will change shape to a  for placing the column on the design screen.

4. Place the curve cursor where you want to position the left edge of the column and click the left mouse button.
5. Enter the curve setup information.

Information about the Curve Column position and name, data values, appearance, and grids can be found in the topics listed below.

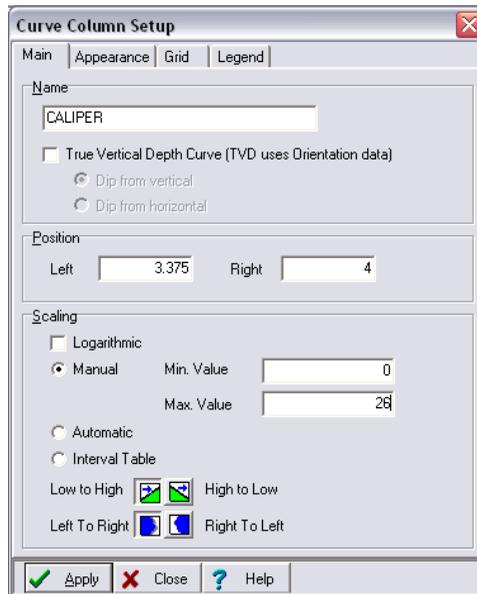
- To accept the displayed settings, click the **Apply** button. You will see the Curve Column in the design screen, with the requested color, grid lines, etc. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
- To close the Curve Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Curve Column, right-click on the Curve Column and select **Edit Entity**, or find the Curve Column in the **View Entity List** and choose the **Edit** button.

Set up the curve name, position, and scaling

Use the settings on the **Main** tab of the Curve Column Setup window to define the name and positioning for the curve column, and to establish the data range and scaling.



- Name:** The **Name** field is used to identify the Curve Column. Any data in a Curve or Multi-Curve tab in the LogPlot data file that is flagged with the same name will be plotted in this column. For example, if the Curve Column is named "Gamma", then any data listed in a "Gamma" curve tab or in a "Gamma" column in a Multi-Curve tab will be plotted in this column.

The name you declare must match, character-for-character, the name for the curve data listed in the data file. The name match is not case-sensitive. The name can be up to 60 characters in length, including spaces.

! True Depth Curves:

If you want to display true depth in the curve, rather than downhole data, you should set the **Name** field to the name of the Orientation data tab containing the downhole survey data.

Then, insert a check in the True Depth Curve check box. Specify whether the downhole survey data is entered as dip from vertical (0 = straight down and 90 = horizontal) or as dip from horizontal (0 = horizontal, -90 = straight down, +90 = straight up, as entered in RockWorks).

See the other true-depth-specific notes regarding the scaling, below.

2. **Position:** These list the horizontal coordinates for the curve column. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).

3. **Scaling:**

Logarithmic: Insert a check here if the curve is to be scaled logarithmically (log base 10) within the column. If left un-checked, the curve will be scaled linearly across the column.

Minimum and Maximum Values: These settings define the range of data values to be represented in the curve column.

Manual: This is the default setting. This allows you to define manually the data values to correspond to the left and right column edges via the **Min. Value** and **Max. Value** boxes.

Linear Scaling: Simply type in the data value range to be represented in the curve column. For example, if the column is to contain drilling rate values that are to be plotted from 0 to 60 feet per minute, you would enter "0" for the **Min. Value** and "60" for the **Max. Value**.

Logarithmic Scaling: For the **Min. Value**, enter the non-negative and non-zero real number to represent the minimum value of the logarithmic curve column. You may then select the appropriate **Max. Value** using the up- or down-arrows next to that prompt. You are restricted to even logarithmic cycles, such as 0.2 to 2,000, 1 to 10,000, etc.



Type in the minimum value for the curve column. Then use the arrow buttons to select from one of the displayed Max Values (logarithmic cycles).

If **Logarithmic Scaling** is selected and the program encounters a zero or negative value in the data file, that value will be plotted at the minimum-value edge of the column.

! True-Depth Curves: These special-case curves don't display measured data, but instead are used to represent drilled depths versus actual elevations as a curve. You should set the **Min. Value** to the lowest true elevation and the **Max. Value** to the elevation at the top of the well.

Automatic: New! Choose this option if you want the curve's minimum and maximum values to be determined automatically by the program, based on the data values, at compile time. LogPlot will scan the data values and set the curve scale to a reasonable min-max range to accommodate the values. For example, if the data ranges from 1.6 to 8.2, it would set the curve column's linear Min. Value to 0 and the Max. Value to 10.

- If you have header/footer column legends linked to the curve, they should be updated appropriately.
- If you have activated automatic value labels, they should be updated appropriately.
- It's important to note that Automatic scaling will probably result in the curve column's min-max value range varying from well to well, based on the data range represented - if it is important that the curve column represents the same data range for all wells in a project, you should use the **Manual** option.

Scale Table: New! Choose this option if you want to change the horizontal scale for a curve for one or more depth intervals in the log. This can be handy for display of abrupt drilling rate changes, for example.

- This requires a Scale Table be present in the data file, which defines the top and base depth and the minimum and maximum column values for that depth range. The Scale Table must have the same name as the curve column. If no Table is found, the program will use the Manual settings for the column.
- Header/footer column legends will not change for these scale changes.
- Automatic value legends will be updated for these scale changes.

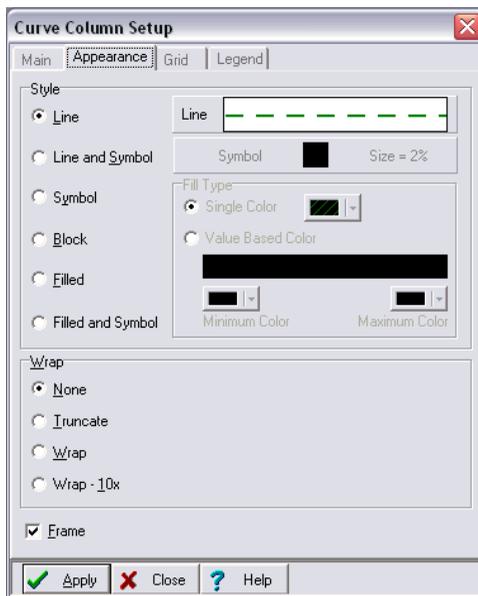
Direction:

If the data values are to be plotted from the left to the right (e.g. the minimum value along the left column edge and the maximum value along the right column edge), click on the **Low to High** button. If the data are to be plotted from the right to the left (e.g. the minimum value along the right column edge and the maximum value along the left column edge), click on the **High to Low** button.

If you have set the curve appearance to be filled (as specified under appearance settings) and you want the solid fill to be to the left of the curve, click on the **Left to Right** button. If the solid fill is to be to the right of the curve, click on the **Right to Left** button. This operates independently of the actual min-max direction of the curve.

Set up the curve appearance

Use the settings on the **Appearance** tab of the Curve Column Setup window to define a variety of settings that control the appearance of the curve and curve column.



1. Click on the **Appearance** tab of the Curve Column Setup window.
2. Set up the curve **Style**.

Line: Click on this large line sample to select the style, thickness and color for the curve line. You may select this information even if you wish to fill the curve with a solid color, below.

Curve Style: Select one of the options:

Line: With this option, the curve is plotted as a line, of the style and color selected above.

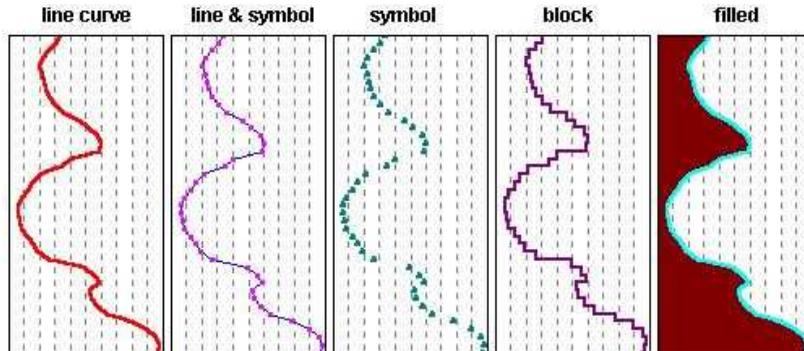
Line and Symbol: This option plots the curve as a line, using the style and color selected above. In addition, a symbol will be plotted at each data point listed in the source file. Selecting the symbol type is done using the **Symbol** button to the right (discussed below).

Symbol: This option plots a symbol at each data point in the curve column, with no line connecting the points. Selecting the symbol type is done using the **Symbol** button to the right (discussed below).

Block: This option transforms a point to point curve to a block curve, using the style and color selected above.

Filled: This option fills the curve with solid color. Click on the Color box to choose the color for the fill. This may be a different color than the **Line** color established above.

Compare these examples below.



Fill Type: Click in the **Single Color** button if the curve is to be filled with a single, solid color. Click in the color box to select that color. Or, click in the **Value Based Color** button to create a gradient of color within the column. Use the color boxes to select a color for the minimum and maximum data values within the column.

Symbol: If you have requested a Curve Style that includes symbols, you can click on the **Symbol** example to select the symbol type and color.

Style: Select one of the symbol shapes and fills from the drop-down list at the top of the pop-up window.

Color: Choose a color for the curve symbols by clicking on the box and selecting a color.

Size: Choose **Small, Medium, or Large**, which represent percent of column width. If the pre-set sizes are too small or too large for your liking, you can select **Other** and enter a preferred percent value in the prompt box.

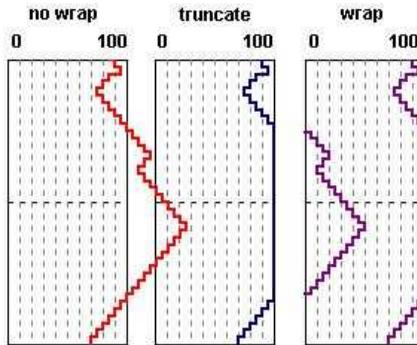
3. Set up the curve **Wrap**. LogPlot contains a tool to "wrap" a curve if the plotted data exceeds the maximum value of the column. Select one of the options:

None: If this option is selected, the curve will be plotted beyond the boundary of the column if the data value exceeds the maximum value of the column.

Truncate: With this option, the curve plot will be truncated at the column border if the data value exceeds the maximum value of the column.

Wrap: This option will wrap the curve back to its baseline if the data value exceeds the maximum value of the column. When wrapped, the curve column then takes on the next data range for the plotting of the curve. If the wrapped data exceeds the maximum again, the program will continue to wrap to the baseline again.

Compare the following examples of a block curve, in which the high data values of 101-150 plot off the column (no wrap), are truncated, or are wrapped back to the midline:



Wrap 10x: This option functions like the **Wrap**, above, except that the wrapped portion of the curve is scaled to $1/10^{\text{th}}$ the original scale. This can accommodate large data spikes without having to wrap multiple times.

For Wrap and Wrap 10x, curve values that are less than the column minimum will be truncated.

4. **Frame:** Insert a check in this box if you want the Curve column to be bounded by a solid, black line.

Set up grid lines (value and depth)

The **Grid** tab in the Curve, Bargraph, Cross-Plot Curve, and Tadpole setup windows contains settings that control the plotting of horizontal and vertical grid lines to serve as value and depth reference markers.

Grid

Plot Value Grid
 Grids On Top

Value

Major Interval

Major Interval

Divisions:

Style + Color:

Minor Intervals

Minor Intervals Within Major Interval

Divisions:

Style + Color:

Plot Depth Grid

Depth

Major Interval

Major Interval

Depth Units:

Style + Color:

Minor Intervals

Minor Interval

Depth Units:

Style + Color:

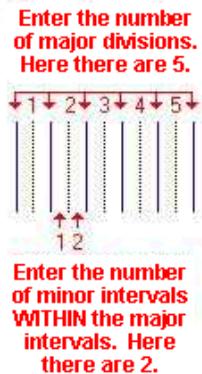
! For Cross-Plot Curves, it's important to note that the value and depth grids will be shared by both Curve 1 and Curve 2.

1. Click on the **Grid** tab in the Curve, Bargraph, Cross-Plot Curve, or Tadpole Column Setup window.
2. **Grids on Top:** If you would like the value and depth grid lines, if activated, to plot **on top of** your bargraphs, curves (typically if you are plotting filled curves, so the fill won't obscure the grid lines), or tadpoles, insert a check here.
3. **Plot Value Grid:** If you want "value" grid lines to be plotted within the column, insert a check-mark in this box. These are vertical lines that plot across the column, to note value divisions.

Linear Scaling If you have set up **Linear** scaling (Main tab), you can define both a major and a minor interval for the value grid lines:

Major Interval: Insert a check in this box to define the number of major groupings across the column. Click on the Style + Color sample to select a line style, thickness, and color for the major grid lines.

Minor Interval: Insert a check in this box to define the number of minor groupings WITHIN the major groupings. Click on the Style + Color sample to select a line style, thickness, and color for the minor grid lines.



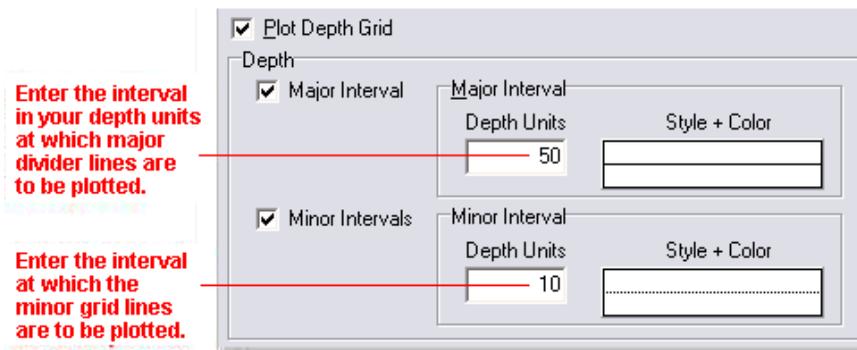
The screenshot shows the software interface for setting grid lines. It features a 'Value' section with the following options:

- Plot Value Grid
- Grids On Top
- Major Interval
 - Major Interval
 - Divisions: 5
 - Style + Color
- Minor Intervals
 - Minor Intervals Within Major Interval
 - Divisions: 2
 - Style + Color

Logarithmic Scaling: If you have requested **Logarithmic** scaling, then the program will determine automatically the number of grid lines to plot based on the log cycles that are represented by the minimum and maximum data values. You are, however, able to establish the major and minor grid line appearance.

4. **Plot Depth Grid:** If you want depth or elevation grid lines to be plotted within the column, insert a check-mark in this box. These are horizontal lines that plot down the column, to note depth or elevation intervals.

Major Interval: Insert a check here to define a main depth or elevation interval, and click on the Style + Color box to select a line style, thickness and color for these lines. Enter the actual depth or elevation interval at which the lines should be drawn.



Minor Interval: Insert a check here to define a minor depth/elevation interval, and click on the Style + Color box to establish the line appearance. Enter the actual depth or elevation interval at which the lines should be drawn.

Set up automatic value labels

The **Legend** tab in the Curve Column setup window is used to activate and configure automatic values labels that can be plotted at periodic intervals in a Curve column.



1. Click on the Legend tab in the Curve Column Setup window.
2. To activate the plotting of the value legend, insert a check-mark in the **Plot Legends** box.
3. Establish the **Interval** settings:

Depth Between Labels: Type in the depth interval between the automatic labels. For example, if you want labels to appear every 50 feet on the log, type in "50". For every 100 meters (if those are your depth units) type in "100".

Offset from Depth: This controls how far above or below the actual depth the top of the label text will be placed. This can be helpful to avoid overplotting on regularly-spaced depth grid lines. Some examples:

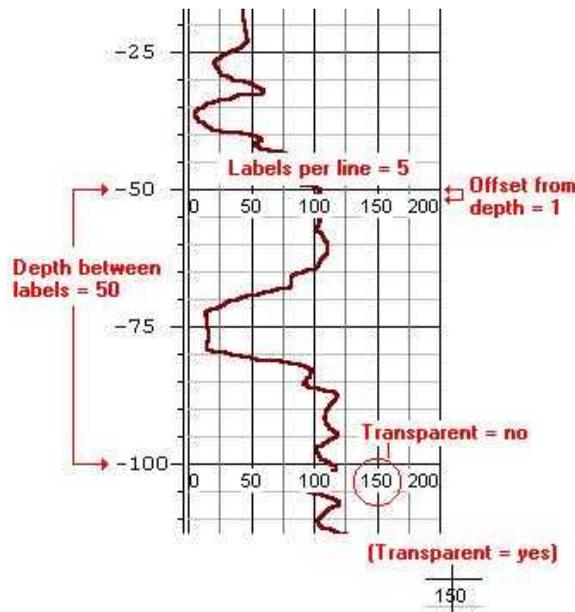
To position the top of the labels directly at the declared depth intervals, enter "0".

To place the top of the labels 1 foot below the depth intervals, enter "1".

If you want to bump the labels above the depth intervals, you need to enter the offset as a negative value; "-2" will place the top of the label text 2 feet above each depth interval.

Labels per line: Type in the number of labels to appear at each depth interval. This will include the minimum column and maximum column values at either side of the column, and any additional labels in between.

Tip: If you have activated the column's value grid, set the **Labels per line** to the same value as the Major Interval Divisions *plus 1*. For example, if your value grid is set to 4 major divisions, set the Labels per line to 5.



Display with scale change: If you have selected any curve wrapping (appearance tab) or horizontal scaling via a Curve Scale Table, you can request the legend labels be plotted to reflect the wrapped scale change. Here's an example:

Alternatives: Columns in which individual curves are displayed are designed with the Curve Column tool.

LogPlot data tabs: The data for a Cross-Plot Curve Column can be read from a Cross-Plot Curve tab (page 154), a Multi-Curve tab (page 169), or a regular Curve tab (page 155) in the data file. This means that a single curve data listing can be plotted in several places on the log.

How to...

Insert a Cross-Plot Curve Column in the log design.

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

3. Select the **Cross-Plot Curves Column** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Crossplot Curves Column.)

The pointer will change shape to a "" for placing the column on the design screen.

4. Place the column cursor where you want the left edge of the column to be, in the log body portion of the design screen, and click the left mouse button to place it.
5. Enter the column settings in the displayed window.

Information about the Cross-Plot Curve position, name and data values, appearance, and grids can be found in the topics listed below.

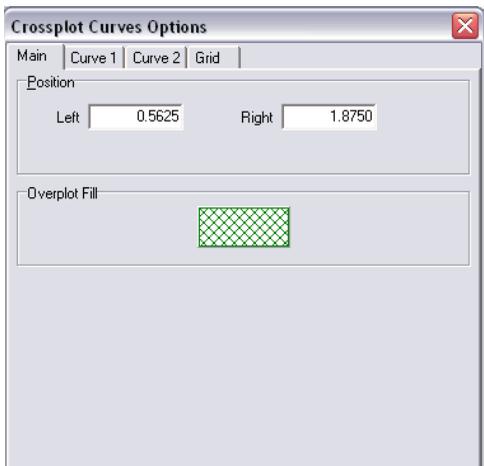
6. To accept the displayed information, click the **Apply** button. You will see the Cross-Plot Curve column displayed in the design screen, with the appropriate horizontal and vertical grid lines, etc. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
7. To close the Crossplot Curve Options window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Cross-Plot Curve Column, right-click on the Column and select **Edit Entity**, or find the Cross-Plot Curve Column in the **Edit / View Entity List** and choose the **Edit** button.

Set up the Cross-Plot Curve position and over-plot color.

1. Click on the Main tab of the Crossplot Curve Options window.



2. **Position:** These list the horizontal coordinates for the column. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).
3. **Overplot Fill:** Click on this box to select the color and pattern to be used to fill the region where Curve 1 and Curve 2 overlap. If no fill is desired, select the blank pattern. Here are some examples of how you can vary the curve direction, curve fill, and overlap fill to achieve different results:



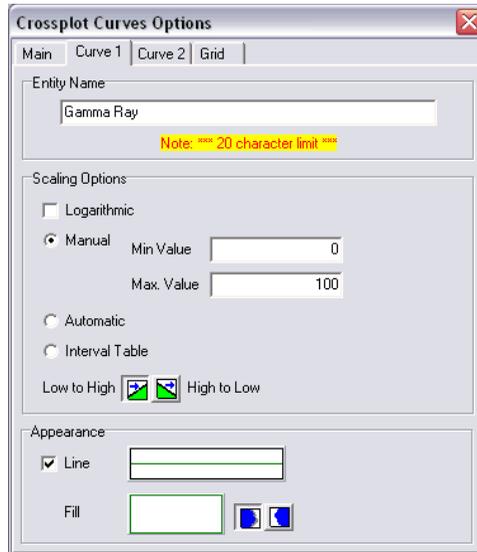
In this example, the curves are plotted in opposite directions. Curve 1 is plotted in blue (filled or not), Curve 2 is plotted in red (filled or not), with the overlap color set to solid green.



In this example, the curves are both plotted left-to-right. Curve 1 is plotted in blue (no fill). Curve 2 is plotted in solid green with red outline. The overlap zone is plotted in solid red.

Set up the Cross-Plot Curve names, data range, scaling, and appearance.

1. Click on the Curve 1 and Curve 2 tabs in the Crossplot Curves Options window to establish the data, scaling, and appearance options for *both Curve 1 and Curve 2*.



2. Establish the curve **Name**: For each curve trace in the cross-plot column, enter a **Name** to identify the curve. Any data in a Cross-Plot Curve, Curve, or Multi-Curve tab in the LogPlot data file that is flagged with the same name will be plotted in this column. The name you declare must match, character-for-character, the name for the curve data listed in the data file. The name match is not case-sensitive. The name can be up to 20 characters in length, including spaces.

- It doesn't make much difference which curve you declare for Curve 1 or Curve 2. Note, however, that Curve 2 will always plot on top of Curve 1.

3. **Scaling**: Establish the curve Scaling options for both Curve 1 and Curve 2:

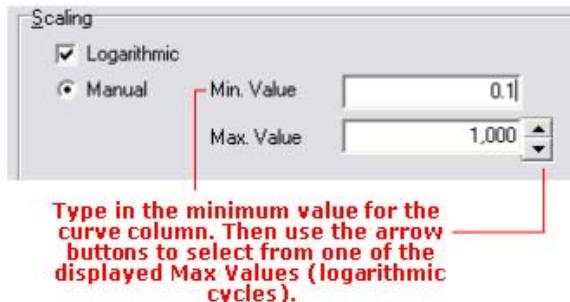
Logarithmic: Insert a check here if the curve is to be scaled logarithmically (log base 10) within the column. If left un-checked, the curve will be scaled linearly across the column.

Minimum and Maximum Values: These settings define the range of data values to be represented for this curve in the curve column.

Manual: This is the default setting. This allows you to define manually the data values for each curve to correspond to the left and right column edges via the **Min. Value** and **Max. Value** boxes.

- **Linear Scaling**: Simply type in the data value range to be represented in the curve column. For example, if the column is to contain drilling rate values that are to be plotted from 0 to 60 feet per minute, you would enter "0" for the **Min. Value** and "60" for the **Max. Value**.

- **Logarithmic Scaling:** For the **Min. Value**, enter the non-negative and non-zero real number to represent the minimum value of the logarithmic curve column. You may then select the appropriate **Max. Value** using the up- or down-arrows next to that prompt. You are restricted to even logarithmic cycles, such as 0.2 to 2,000, 1 to 10,000, etc.



- If **Logarithmic Scaling** is selected and the program encounters a zero or negative value in the data file, that value will be plotted at the minimum-value edge of the column.

Automatic: New! Choose this option if you want the curve's minimum and maximum values to be determined automatically by the program, based on the data values, at compile time. LogPlot will scan the data values and set the curve scale to a reasonable min-max range to accommodate the values. For example, if the data ranges from 1.6 to 8.2, it would set the curve column's linear Min. Value to 0 and the Max. Value to 10.

- If you have header/footer column legends linked to the curve, they should be updated appropriately.
- If you have activated automatic value labels, they should be updated appropriately.
- It's important to note that Automatic scaling will probably result in the curve column's min-max value range varying from well to well, based on the data range represented - if it is important that the curve column represents the same data range for all wells in a project, you should use the **Manual** option.

Direction:

If the data values are to be plotted from the left to the right (e.g. the minimum value along the left column edge and the maximum value along the right column edge), click on the **Low to High** button. If the data are to be plotted from the right to the left (e.g. the minimum value along the right column edge and the maximum value along the left column edge), click on the **High to Low** button.

4. Set the appearance for Curve 1 and Curve 2:

Line: Insert a check in this box if you want to plot a line to define the curve. If activated, click on the box to the right to select line style, line thickness, and color.

Fill: Click on this box to select a fill pattern and color. If no fill is desired, select the blank pattern

Fill Direction: If you have selected a non-blank fill pattern, you can choose whether the curve is to be filled to the left or to the right. This setting operates independently of which direction the curve is actually plotting! See below for some examples.

Here are some examples of how you can vary the curve direction, curve fill, and overlap fill to achieve different results:



In this example, the curves are plotted opposite directions. Curve 1 is plotted in blue (filled or not), Curve 2 is plotted in red (filled or not), with the overlap color set to solid green.



In this example, the curves are both plotted left-to-right. Curve 1 is plotted in blue (no fill). Curve 2 is plotted in solid green with red outline. The overlap zone is plotted in solid red.

Set up grid lines (value and depth)

See page 96 for more information.

Adding a Pattern Percent Column

Use: A Pattern Percent column is used to plot lithology patterns in a column, based on component percentages.

How it works: As you compile your log in LogPlot, the program will locate relative percentage data for declared keywords and intervals that are listed in a Percent data tab that has the same name. It will plot the appropriate patterns in the Pattern Percent column, the width of each pattern corresponding to that component's percent representation. This is typically used to represent cuttings percentages in a graphic manner.

Alternatives: See the Lithology Pattern column (page 78) for plotting individual pattern blocks for each depth interval. See the Fillbar Column (page 118) for more generic pattern-filled columns.

LogPlot data tabs: Pattern Percent Columns are linked to LogPlot Percent tabs (page 175).

How to...

Create a pattern percent column in a log design

1. Access the Log Designer window.

Designing Your Logs

- In the toolbar pane to the left of the design window, click the Log Body Tool Button

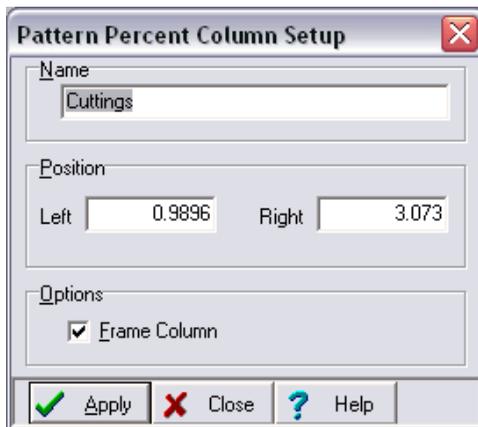


if necessary to display the log body buttons.

- Select the **Pattern % Column** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Pattern Percent Column.)

The pointer will change shape to a  for placing the column on the design screen.

- Place the cursor where you want the left edge of the column to be, in the log body portion of the design screen, and click the left mouse button to place it.
- Enter the requested information in the column Setup window.

A dialog box titled "Pattern Percent Column Setup" with a close button (X) in the top right corner. It contains three sections: "Name" with a text field containing "Cuttings"; "Position" with "Left" and "Right" labels and text fields containing "0.9896" and "3.073" respectively; and "Options" with a checked checkbox labeled "Frame Column". At the bottom are three buttons: "Apply" (with a green checkmark icon), "Close" (with a red X icon), and "Help" (with a blue question mark icon).

Name: Enter the name for this Pattern Percent column. Any percentage data in the LogPlot data file that is flagged with the same name will be plotted in this Pattern Percent column. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Pattern Percent column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).

- To accept the displayed information, click the **Apply** button. You will see the Pattern Percent column placed in the design screen, filled with several pattern designs. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
- To close the Pattern Percent Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Pattern Percent column right-click on the Pattern Percent column and select **Edit Entity**, or find the Pattern Percent column in the **View Entity List** and choose the **Edit** button.

Adding a Bar Graph Column

Use: A Bar Graph Column is used to plot quantitative data as scaled bars over depth intervals.

How it works: As you compile your log in LogPlot, the program will locate data in the Interval Data or Multi-Interval-Data columns, and it will plot the data in the Bar Graph column of the same name. The data may be plotted from left to right or right to left, linear or logarithmic scale, with or without horizontal or vertical reference grids. You may vary the color and fill pattern for the bars. Each Bar Graph column on the log must have a separate Interval-Data tab (or column in a Multi-Interval-Data tab) in the data file.

Alternatives: If you wish to display the data values themselves (as text labels) you can do so using a Bar Graph Value column or an Interval Text column.

LogPlot data tab: Bar Graph columns are linked to data entered into an Interval Data tab (page 164) or Multi-Interval-Data tab (page 171).

How to...

Insert the Bar Graph column into the log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

3. Select the **Bar Graph** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Bargraph Column.)

The pointer will change shape to a "" for placing the column on the design screen.

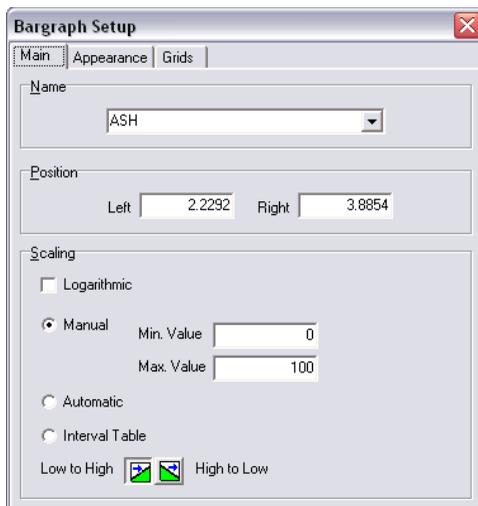
4. Place the cursor where you want to position the left edge of the column and click the left mouse button.
5. Enter the Bar Graph setup information.
Information about the Bar Graph Column position and name, data values, appearance, and grids can be found in the topics listed below.
6. To accept the displayed settings, click the **Apply** button. You will see the Bar Graph Column in the design screen, with the requested color/pattern, grid lines, etc. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
7. To close the Bar Graph Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Bar Graph Column, right-click on the Bar Graph Column and select **Edit Entity**, or find the Bar Graph Column in the **View Entity List** and choose the **Edit** button.

Set up the Bar Graph name, position, and scaling

Use the settings on the Main tab of the Bargraph Setup window to define the name and positioning for the bar graph column, and to establish the data range and scaling.



1. **Name:** The **Name** field is used to identify the Bar Graph column. Any data in an Interval Data tab or Multi-Interval-Data tab in the LogPlot data file that is flagged with the same name will be plotted in this column. The name you declare must match, character-for-character, the name for the interval data listed in the data file. The name match is not case-sensitive. The name can be up to 60 characters in length, including spaces.
2. **Position:** These list the horizontal coordinates for the Bar Graph column. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).
3. **Scaling:**

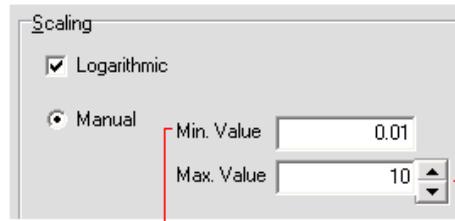
Logarithmic: Insert a check here if the bar graph is to be scaled logarithmically (log base 10) within the column. If left un-checked, the bar graph will be scaled linearly across the column.

Minimum and Maximum Values: These settings define the range of data values to be represented in the bar graph column.

Manual: This is the default setting. This allows you to define manually the data values to correspond to the left and right column edges via the **Min. Value** and **Max. Value** boxes.

- **Linear Scaling:** Simply type in the data value range to be represented in the bar graph column. For example, if the column is to contain assay values that are to be plotted from 0 to 5 ppm, you would enter "0" for the **Min. Value** and "5" for the **Max. Value**.
- **Logarithmic Scaling:** For the **Min. Value**, enter the non-negative and non-zero real number to represent the minimum value of the logarithmic bar graph column. You may then select the appropriate **Max. Value** using the

up- or down-arrows next to that prompt. You are restricted to even logarithmic cycles, such as 0.2 to 2,000, 1 to 10,000, etc.



Type in the minimum value for the bar graph column. Then use the arrow buttons to select from one of the displayed Max. Values (logarithmic cycles).

- If **Logarithmic Scaling** is selected and the program encounters a zero or negative value in the data file, that value will be plotted at the minimum-value edge of the column.

Automatic: *New!* Choose this option if you want the bargraph's minimum and maximum values to be determined automatically by the program, based on the data values, at compile time. LogPlot will scan the data values and set the column scale to a reasonable min-max range to accommodate the values. For example, if the data ranges from 1.6 to 8.2, it would set the bargraph column's linear Min. Value to 0 and the Max. Value to 10.

- If you have header/footer column legends linked to the curve, they should be updated appropriately.
- It's important to note that Automatic scaling will probably result in the bargraph column's min-max value range varying from well to well, based on the data range represented - if it is important that the column represents the same data range for all wells in a project, you should use the **Manual** option.

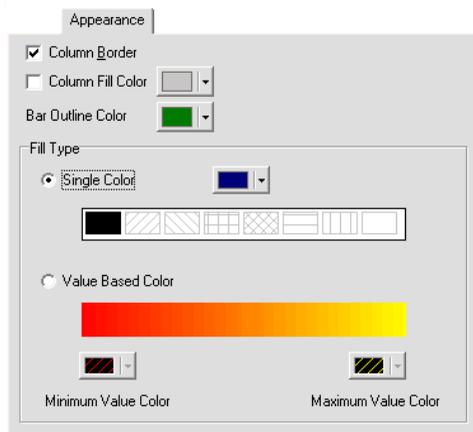
Direction:

If the data values are to be plotted from the left to the right (e.g. the minimum value along the left column edge and the maximum value along the right column edge), click on the **Low to High** button. If the data are to be plotted from the right to the left (e.g. the minimum value along the right column edge and the maximum value along the left column edge), click on the **High to Low** button.

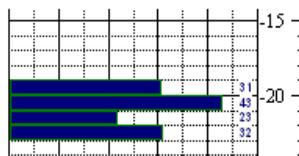
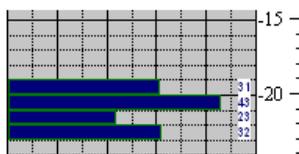
Set up the Bar Graph appearance

1. Click on the Appearance tab of the Bargraph Setup window. It contains a variety of settings that control the appearance of the Bar Graph column.

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2. **Column Border:** Insert a check here if the Bar Graph column itself is to be bounded by a solid-line rectangle.
3. **Column Fill Color:** Insert a check here if the background portion of the column is to be filled with color. Compare the examples below.



3. **Bar Outline Color:** Click on the color box to select the color for the bounding outline of each bar.
4. **Fill Type:**

Choose **Single Color** if you want the bars to be filled with a pattern or solid of a single color. Select the pattern to be used to fill the bars by clicking in one of the pattern boxes, and choose the fill color.

Click in the **Value Based Color** button to create a gradient of solid color within the column. Use the color boxes to select a color for the minimum and maximum data values within the column.

Set up grid lines (value and depth)

See page 96 for more information.

Adding a Bar Graph Value Column

Use: A Bar Graph Value column is used to plot text labels representing data values, usually in association with a Bar Graph_column_

How it works: As you compile your log in LogPlot, the program will locate data in Interval Data tab or Multi-Interval-Data data sheets, and it will plot the numeric values as textual labels in the Bar Graph Value column of the same name. This can pull values from the same data listing as an associated Bar Graph column. The labels may be left or right-justified, opaque or transparent.

Alternatives: If you wish to display the values in a graphic manner, you can use a Bar Graph column. The new Interval Text column behaves similarly to this Bar Graph Value column, with additional formatting options.

LogPlot data tab: Bar Graph Value columns are linked to data entered into an Interval Data tab (page 164) or Multi-Interval-Data tab (page 171).

How to...

Create a Bar Graph Value column in a log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

3. Select the **Bar Graph Value** button  from the tool pane, or command from the **Tools / Log Body Items** menu.

The pointer will change shape for placing the column on the design screen.

4. Place the Bar Graph Value cursor where you want to position the left edge of the column and click the left mouse button.
5. Enter the setup information.

 A dialog box titled "Bargraph Value Setup" with a close button (X) in the top right corner. It contains the following fields and options:

- Name:** A dropdown menu showing "ASH".
- Position:** Two input fields: "Left" with the value "3.1979" and "Right" with the value "3.875".
- Options:**
 - Font:** A button labeled "Font" next to a blue color selection box.
 - Decimals:** A spinner box showing the value "0".
 - Text Alignment:** Two radio buttons: "Left" (unselected) and "Right" (selected).
 - Opaque Text background
 - Draw Column Outline

Designing Your Logs

Name: Click the arrow to the right of this prompt to select the name of the existing Bar Graph column in the design, to which this column is to be associated. This should also be the name of an Interval Data or Multi-Interval Data listing in the data file, where the data will be located. If none exists, you can type in a name. Entity names can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Bar Graph Value column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).

! This Bar Graph Value column can overlay a Bar Graph column if desired.

Font: Click on this button to access font type, style, size, and color for the value labels. If, after you compile your data for this log design within LogPlot, you find that the description characters are too large or too small for the given log scale, you may adjust the text font and size via these dialog box items.

Color: Use this button to select a color for the text. This may also be selected using the **Font** button, above.

Decimals: Click on the up- or down-arrow as necessary to set the number of decimal places for the value labels. Think about this one - if the bargraph values are small, be sure to set an adequate number of decimal places. Similarly, large integer values won't require any decimal places.

Alignment: Choose **Left** to align the first characters of the value labels along the left edge of the column, defined above. Or, choose **Right** to align the last character of each label along the right edge of the column, also defined above.

Opaque Text Background: Insert a check here if the labels are to block out any background items, or leave this blank to leave the text "transparent" so that any background items are still visible.

Draw column outline: Insert a check here if you want the Bar Graph Value column to be bounded by a solid-line rectangle. If this column is overlaying another column that already has a frame, you may wish to disable this outline.

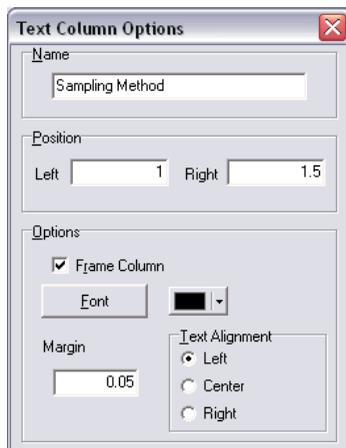
6. To accept the displayed information, click the **Apply** button. You will see the Bar Graph Value column placed in the design screen. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
7. To close the Bar Graph Value Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Bar Graph Value Column, right-click on the Bar Graph Value Column and select **Edit Entity**, or find the Bar Graph Value Column in the **View Entity List** and choose the **Edit** button.

Adding a Text Column

Use: A Text column is used to plot in the body of the log any miscellaneous text that is NOT associated with a lithologic pattern. Text columns can be used to plot comments or other labels; they are defined with a single depth in the data file.



Name: Enter the name for this Text Column. Any text entered in a LogPlot Text-Column data tab with the same name will be plotted in this column. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Text Column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).

Frame Column: If this box is checked, the column will be bounded by a solid-line rectangle.

Font: Use this button to retrieve the Font dialog box where you can establish the font type, style, size, and color to be used for the text column. If, after you compile your data for this log design within LogPlot, you find that the characters are too large or too small for the given log scale, you may access the font settings again using the **Font** button.

Color: Use this button to select a color for the text. This may also be selected using the **Font** button, above.

Margin: Type here the number of screen pixels to act as a margin along the left and right edges of the text column.

Text Alignment: Choose **Left**, **Center**, or **Right** by clicking in the appropriate radio button.

6. To accept the displayed information, click the **Apply** button. You will see the Text column placed in the design screen, labeled "Text Col." You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
7. To close the Text Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Text Column, right-click on the Text Column and select **Edit Entity**, or find the Text Column in the **View Entity List** and choose the **Edit** button.

Adding a Vertical Text Column

Use: A Vertical Text column is used to plot vertical text labels within the body of the log.

How it works: As you compile your log in LogPlot, the program will locate text listed in a Vertical-Text-Column tab of the same name, and plot it in the Vertical Text column at the indicated depth or elevation range. Vertical text can be used to note interpreted stratigraphic units, geologic time units, etc.

Alternatives: Vertical text labels in the *header* or *footer* of the log are inserted using the Static Text tool. *Horizontal* text listings in the log body are inserted using the Text Column or Interval Text Column tool.

LogPlot data tabs: Vertical Text Columns are linked to data entered into Vertical-Text data tabs (page 184).

How to...

Insert a Vertical Text Column in a log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button

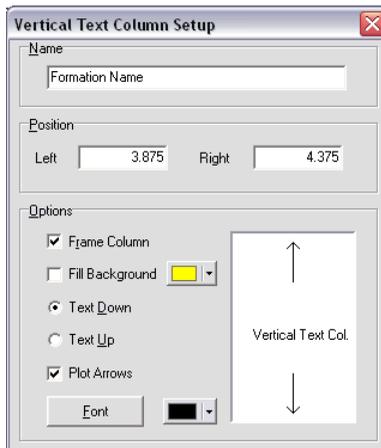


if necessary to display the log body buttons.

3. Select the **Vertical Text Column** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Vertical Text Column.)

The pointer will change shape to a "" for placing the column on the design screen.

4. Place the column cursor where you want the left edge of the column to be, in the log body portion of the design screen, and click the left mouse button to place it.
5. Enter the column settings in the displayed window.



Name: Enter the name for this Vertical Text column. Any text entered in a LogPlot Vertical Text data tab with the same name will be plotted in this column. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Vertical Text column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).

Frame Column: If this box is checked, the column will be bounded by a solid-line rectangle.

Fill Background: Check this box if you want the background portion of the column to be filled with color, and click on the small color box to choose the fill color.

Text Down, Text Up: These radio buttons are used to specify whether the text labels are to be plotted downward or upward in the column. Note the preview in the dialog box which shows examples.

Font: Use this button to retrieve the Font dialog box where you can establish the font type, style, size, and color to be used for the text column.

Color: Use this button to select a color for the text. This may also be selected using the **Font** button, above.

Plot Arrows: Insert a check here to include arrows with the vertical text. The arrows will extend to the interval top and base. The arrow appearance cannot be changed.

6. To accept the displayed information, click the **Apply** button. You will see the Vertical Text column displayed in the design screen, labeled "Vertical Text Col." You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
7. To close the Vertical Text Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Vertical Text Column, right-click on the Vertical Text Column and select **Edit Entity**, or find the Vertical Text Column in the **View Entity List** and choose the **Edit** button.

Adding a Symbol Column

Use: A Symbol column is used to plot a specific symbol at user-declared depths. LogPlot can plot vector symbols or bitmap symbols.

How it works: As you compile your log in LogPlot, the program will locate a depth or elevation declaration listed in the Symbol-Column data tab. It will plot the user-specified symbol at the declared depth/elevation in the Symbol Column of the same name. Such symbols could be used to note locations where gas shows were measured (above, left), or to note water level depth (above, right). Each Symbol column on the log must have a separate tab in the LogPlot data file.

LogPlot data tabs: Symbol Columns are linked to data entered in Symbol Column data tabs (page 178).

How to...

Add a symbol column to a log design

1. Access the Log Designer window.

- In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

- Select the **Symbol Column** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Symbol Column.)

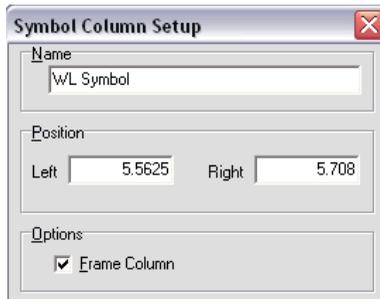
The pointer will change shape to a  " for placing the column on the design screen.

- Place the symbol cursor where you want the left edge of the column to be, in the log body portion of the design screen, and press the left mouse button.

The program will display the Symbol Column Setup window.

! Tip: You can place a Symbol column right on top of another log design entity, such as a Well Construction column to show water level, or a Scale Bar to show drill stem tests.

- Enter the requested information:



Name: Enter the name for this Symbol column. Any symbol data in the LogPlot data file that is flagged with the same name will be plotted in this Symbol column. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Symbol column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen(see Moving and Resizing Log Body Components). Note that the size of the symbols plotted into the Symbol column is determined by size declarations in the data file.

Frame Column: If this box is checked, the column will be bounded by a solid-line rectangle.

- To accept the displayed information, click the **Apply** button. You will see the Symbol column placed in the design screen. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
- To close the Symbol Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Symbol Column, right-click on the Symbol Column and select **Edit Entity**, or find the Symbol Column in the **View Entity List** and choose the **Edit** button.

Adding a Fill Bar Column

Use: A Fill Bar column is used to fill user-declared depth intervals with a specific pattern.

How it works: As you compile your log in LogPlot, the program will locate depth or elevation intervals listed in a "Fill Bar" data tab. It will plot either (1) a constant (user-specified) pattern from the top to the base of the interval in the Fill Bar column of the same name, or (2) if the data lists a keyword for the interval, it will plot the keyword-specified pattern fill for the interval. Such pattern intervals are typically used to note intervals of core sampling or of qualitative nature such as "trace show" or "good porosity." Each Fill Bar column on the log must have a separate Fill Bar tab in the data file.

Alternatives: If you need pattern columns that are linked to lithology data, use a Lithology Pattern Column.

LogPlot data tabs: Fill Bar Columns are linked to depth intervals and optional keywords listed in Fill Bar data tabs (page 159).

How to...

Add a Fill Bar to a log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button

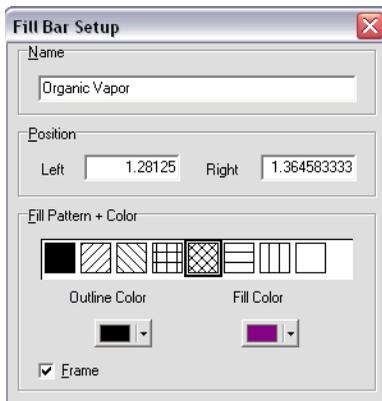


if necessary to display the log body buttons.

3. Select the **Fill Bar** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Fill Bar Column.)

The pointer will change shape to a "" for placing the column on the design screen.

4. Place the fill bar cursor where you want the left edge of the column to be, in the log body portion of the design screen, and press the left mouse button.
5. Enter the requested information in the Fill Bar Setup window.



Name: Enter the name for this Fill Bar Column. Any fill bar data in the LogPlot data file that is flagged with the same name will be plotted in this column. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Fill Bar column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).

Fill Pattern: Click on the pattern to be used to fill the Fill Bar intervals.

Outline Color: Choose the color for the outline of the filled intervals.

Fill Color: Choose the color for the pattern to be used to fill the intervals.

Frame: Insert a check here if you want the entire Fill Bar column to be drawn in a solid black line. Remove the check if no outline is desired. If deactivated, the column will be "invisible" unless an interval is plotted.

- To accept the displayed information, click the **Apply** button. You will see the Fill Bar Column placed in the design screen, filled with the selected pattern and color. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
- To close the Fill Bar Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Fill Bar Column, right-click on the Fill Bar Column and select **Edit Entity**, or find the Fill Bar Column in the **View Entity List** and choose the **Edit** button.

Adding an Image Column

Use: An Image column is used to display a graphic image (BMP, JPG, TIFF, PNG, PCX, TGA, EMF, WMF format) in the body of a log, in order to illustrate core sample images, scanned logs, fossil pictures, special sampling symbols, and more.

Alternatives: Bitmaps that you wish to include in the *header* or *footer* of the log are inserted using the Header / Footer Picture tool.

How it works: As you compile your log in LogPlot, the program will locate a Bitmap data tab with the same name as the Image column in the log's design. Any BMP, JPG, TIFF, PNG, PCX, TGA, WMF, EMF images listed in the data tab will be plotted in that column. The images can be plotted at real size or stretched to fill the column width and depth interval length. Each Image column on the log must have a separate Image tab in the data file.

LogPlot data tabs: Image columns are linked to data entered into Bitmap data tabs (page 152).

How to...

Insert an Image column in a log design

- Access the Log Designer window.
- In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

- Select the **Pictures** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Image Column.)

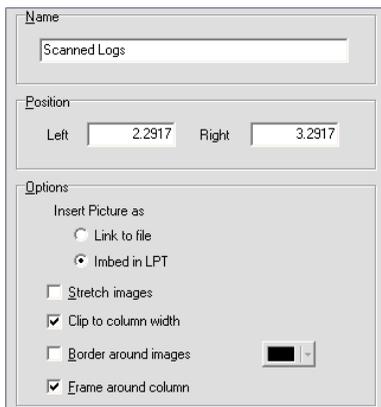
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The pointer will change shape to a "" for placing the column on the design screen.

- Place the cursor where you want the left edge of the Image column to be, in the log body portion of the design screen, and press the left mouse button.

The program will display the Image Column Setup window.

- Enter the requested settings.



The screenshot shows the 'Image Column Setup' dialog box. It is divided into three sections: 'Name', 'Position', and 'Options'.
- **Name:** A text box containing 'Scanned Logs'.
- **Position:** Two text boxes labeled 'Left' and 'Right'. 'Left' contains '2.2917' and 'Right' contains '3.2917'.
- **Options:** A group box containing several checkboxes and radio buttons:
 - 'Insert Picture as' with two radio buttons: 'Link to file' (unselected) and 'Imbed in LPT' (selected).
 - 'Stretch images' (unchecked).
 - 'Clip to column width' (checked).
 - 'Border around images' (unchecked) with a small color swatch to its right.
 - 'Frame around column' (checked).

Name: Enter the name for this Image column. When you compile your log, if LogPlot finds an Image data tab with the same name, it will plot the referenced image file(s) into the column. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Image column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).

Insert Picture as:

Choose **Link to file** if you don't want the image(s) themselves to be saved within the compiled LPT file; instead the program will save a link to the image file(s). This will keep the LPT file smaller in size but you'll need to be sure to keep all referenced images in the same folder as the LPT file so that they will display when you open the log in the future. See additional notes in the Bitmap data tab (page 152) regarding file name paths.

Choose **Imbed in LPT** if you want the program to save the image(s) in the compiled log LPT file. This will cause the LPT file to be larger in disk size, but is a good option if keeping track of files and links is a bother. This is particularly true if you wish to share the LPT with a co-worker or client.

Stretch Images: Insert a check in this box if you want the image that will be plotted in this column to be stretched to fill the entire column width. *This is important!*

If this box is checked, the image will be resized horizontally to fill the width of the Image column you declare here.

If this box is not checked, the image will be plotted in the column at its "true size" using.

Note that bitmaps are always stretched vertically to fill the declared depth interval range declared in the data file.

Clip to column width: Insert a check here if the program should clip bitmaps that are wider than the column to the column width.

Border Around Images: Insert a check in this box if you want the images themselves to be surrounded by a solid-line border. If multiple images are displayed within this column, each will be bordered.

Frame around Column: Insert a check here if the Image column is to be surrounded by a solid-line border.

6. To accept the displayed information, click the **Apply** button. You will see the Image column displayed in the design screen, labeled "IMG." You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
7. To close the Image column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Image column, right-click on the Image column and select **Edit Entity**, or find the Image column in the **View Entity List** and choose the **Edit** button.

Adding a Well Construction Column

Use: A Well Construction column is used to illustrate the materials and intervals used in the construction of the well using graphic pattern blocks. **New** to LogPlot 7 is the ability to plot captions as an integral part of the well construction diagram.

How it works: As you compile your log in LogPlot, the program will locate any Well-Column data tabs and read the declared material names (entered as "keywords," just like lithology) and their inner and outer diameter measurements. If LogPlot finds a Well Construction column in the design of the same name, it will plot the appropriate pattern for each material over the declared depth interval, at the declared width in the column. If requested, text captions for the materials will be plotted in a portion of the diagram. Each Well Construction column on the log must have a separate Well-Column tab in the data file.

LogPlot data tabs: Well Construction Columns are linked to data entered into Well-Column data tabs (page 185).

How to...

Insert a well construction column into a log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



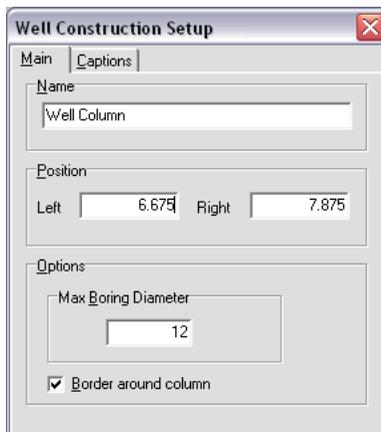
if necessary to display the log body buttons.

3. Select the **Well Construction** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Well Construction Column.)

The pointer will change shape to a "" for placing the column on the design screen.

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- Place the cursor where you want the left edge of the Well Construction column to be, in the log body portion of the design screen, and press the left mouse button to place it.
- Click on the **Main** tab to establish name and location information:



The image shows a dialog box titled "Well Construction Setup" with a close button in the top right corner. It has two tabs: "Main" and "Captions". The "Main" tab is active. Under "Name", there is a text box containing "Well Column". Under "Position", there are two text boxes: "Left" with the value "6.675" and "Right" with the value "7.875". Under "Options", there is a text box for "Max Boring Diameter" with the value "12" and a checked checkbox labeled "Border around column".

Name: Enter the name for this Well Construction column. As you compile your log, if LogPlot finds a Well-Column data tab with the same name, it will plot pattern-filled intervals representing the construction materials in that Column on the log. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Well Construction column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72).

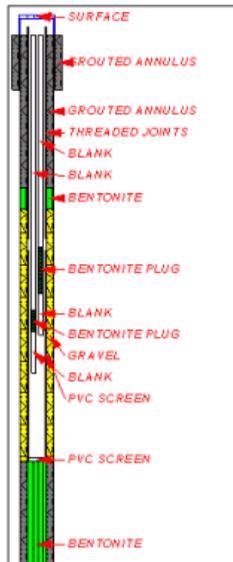
Maximum Boring Diameter: Enter here the real diameter of the drill hole, in any units you wish. An entry of "12," for example, could represent 12 inches. Or an entry of "30" could represent 30 centimeters.

This setting will not affect the actual width of the column on the log (you adjust that yourself just like all of the other log body columns). It *will* determine the width of the casing, screens, and other intervals that will be plotted within the column. These items are all listed within the data file with outer and inner diameter measurements, relative to this **Maximum Boring Diameter**.

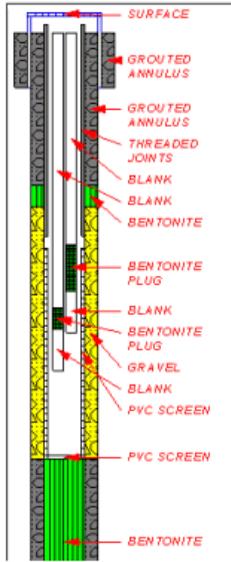
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the font style and color for the captions. See the Well Construction Data setup for information about how the caption text is entered.

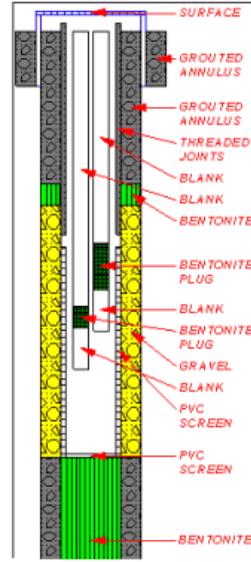
Diagram <-> Caption: Use this slider bar to define how much of the well construction column is to be used by the diagram and how much is to be used by the captions, as a percent. Some examples are shown below, though you should note that you can define other percentages than those shown here just by dragging the slider bar.



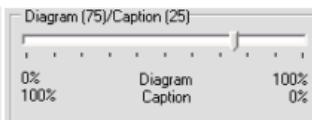
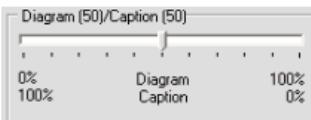
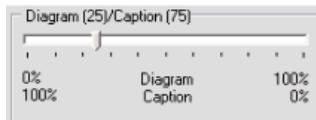
25% diagram 75% caption



50% diagram 50% caption



75% diagram 25% caption



Plot Leader Lines: Insert a check here to include lines between the captions and the construction item. Click on the line sample below this prompt to select the line style and color for the leaders.

Arrows: Insert a check here to include an arrow head on the leader line. It will be plotted in the same color as defined for the line.

7. To accept the displayed information, click the **Apply** button. You will see the Well Construction column displayed in the design screen according to your settings. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
8. To close the Well Construction Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Well Construction Column, right-click on the Well Construction Column and select **Edit Entity**, or find the Well Construction Column in the **View Entity List** and choose the **Edit** button.

Adding Horizontal Log Body Lines

Use: The Horizontal Line tool is used to plot a horizontal line of user-defined length and style at regular depth intervals *AND/OR* at specific user-declared depths in the body of the log. This could be used to plot a line at the total depth level in the log.

How it works: If you request regularly-spaced horizontal lines here in the log design, there's nothing more you need to do; the program will plot the lines at the specified intervals down the log. If you wish to declare specific depths for the line(s), you can do so with Horizontal Line tabs in the data file. You may request both.

LogPlot data tabs: Horizontal Lines can be linked to depth listings in Horizontal Line tabs in the data file (page 161).

Log design example(s): Log design "My Documents\LogPlot 7\Samples\Enviro-geotech8.ldf" contains examples of the use of horizontal lines matching text with a well construction diagram.

How to...

Insert a horizontal line into the log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button

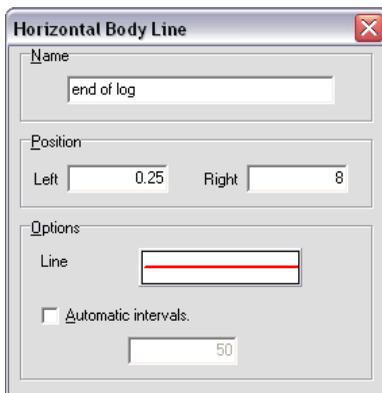


if necessary to display the log body buttons.

3. Select the **Horizontal Line** button  from the tool pane (or command from the **Tools / Log Body Items** menu).

The pointer will change shape to a "+" for placing the line on the design screen.

4. Place the "+" at the horizontal location in the body of the log design where the left edge of the line should be placed, and click the left mouse button.
5. Enter the line settings in the Setup window:



Name: Enter a **Name** to identify the line. This will only be used if you define specific depths for the line in the data file; in this case the name in the Horizontal Line data tab would need to match this name. The name match is not case-sensitive. The name can be up to 60 characters in length, including spaces.

Position: Use the **Left** and **Right** boxes to define the horizontal positioning for the line. If, for example, you want the line plotted from the far left side of the log to the far right side, you would enter coordinates that correspond to the left-most and the right-most log items. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the line's position by editing these values, or by widening/narrowing the line itself on the work screen (see Moving and Resizing Log Body Components, page 72). (The depth of the line will be defined in the data file or using Automatic Intervals, below.)

Line: Click on this box to choose the line style, thickness, and color for the horizontal line.

Automatic Intervals: Insert a check here if you want the horizontal line to be plotted at regular intervals down the log. If activated, you can enter the depth intervals in the prompt box. If not activated, you'll need to specify the depth(s) at which the line is to be plotted via the data file. You can request both automatic intervals AND enter customized depths.

6. To accept the displayed information, click the **Apply** button. You will see the line displayed in the design screen. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
7. To close the Horizontal Body Line window, click the **Close** button.

You will not be able to drag the line up or down in the design screen; its representation should be used to determine horizontal placement only.

Review the Settings

If you need to access the Options window you can: Double-click on the Horizontal Line in the design screen, right-click on the Horizontal Line and select **Edit Entity**, or find the Horizontal Line in the **View Entity List** and choose the **Edit** button.

Adding Vertical Log Body Lines

Use: The Vertical Line tool is used simply to plot a vertical line anywhere on the body of the log. It can be used to darken column boundaries, and to create a solid-line border around the log.

How it works: This is a log design item only; it will be represented in the compiled log like it is in the log design. There are no corresponding data file commands.

LogPlot data tabs: None.

How to...

Insert a vertical line into the log design

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

3. Select the **Vertical Line** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Vertical Line.)

The pointer will change shape to a "+" for placing the line on the design screen.

4. Place the "+" at the horizontal location in the body of the log design where the line should be placed, and click the left mouse button.
5. Enter the line settings in the Setup window:

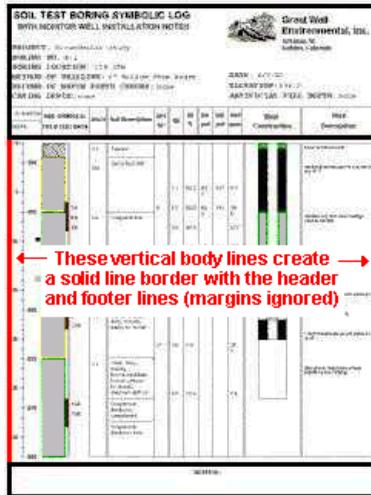


Position: The value displayed here reflects the current horizontal position of the line. The horizontal coordinate is expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the line's position by editing this value, or by dragging the line itself on the work screen (see Moving and Resizing Log Body Components, page 72).

Line: Click on this box to choose the line style, thickness, and color for the vertical line.

Ignore Header/Footer Margin: Insert a check here if you want the body line to extend all the way to the header and footer, thus ignoring any header or footer margin that you have requested. This is commonly used to create solid boundary lines around the log. This would also require that you have boundary lines or rectangles in the header and footer that align with these vertical body lines. (For examples, see many of the Enviro-geotech logs that are installed with the program.)

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! In order for the body line to join continuously with a footer line or rectangle, be sure the footer items are set to a Y coordinate of 0 so that they lie at the very top of the footer.

6. To accept the displayed information, click the **Apply** button. You will see the vertical line displayed in the design screen. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
7. To close the Log Body Line Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Vertical Line in the design screen, right-click on the Vertical Line and select **Edit Entity**, or find the Vertical Line in the **View Entity List** and choose the **Edit** button.

Adding a Tadpole Column

Use: A Tadpole column is used to display structural readings (bearing and dip) at depth, using special "tadpole" symbols. The symbols can be fixed or variable in size and color.

How it works: As you compile your log in LogPlot, the program will read depth, bearing, and dip listings from a Tadpoles data tab. It will plot the tadpole-shaped symbol in the Tadpole Column of the same name. The horizontal placement of the symbol is determined by the dip angle (with horizontal along the left and vertical along the right), and the orientation of the tadpole's tail is determined by the azimuth bearing. The size and color of the symbols can be fixed or variable, depending on how the data is entered.

LogPlot data tabs: Tadpole Columns are linked to data entered in Tadpoles data tabs (page 181).

How to...

Add a tadpole column to a log design

1. Access the Log Designer window.

- In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

- Select the **Tadpole Column** button  from the tool pane. (Or, you can use the menus: Tools / Log Body Items / Tadpole Column.)



The pointer will change shape to a "" for placing the column on the design screen.

- Place the cursor where you want the left edge of the column to be, in the log body portion of the design screen, and press the left mouse button.

The program will display the Tadpole Column Setup window.

- Click on the Main tab to enter the tadpole-specific information:

 A screenshot of the "Tadpole Options" dialog box. It has two tabs: "Main" (selected) and "Grid". The "Name" field contains "Tadpole". The "Position" section has "Left" set to 1.25 and "Right" set to 2.25. The "Appearance" section has "Frame Column" checked. Under "Style", "Solid" is selected. Under "Color", "Fixed" is selected. The "Fixed or Default" dropdown is set to "Fixed". The "Size" section has "Fixed" selected, with a value of 0.1. Below it, "Value Based" is unselected, with "Minimum Size" set to 0.1 and "Maximum Size" set to 0.25.

Name: Enter the name for this Tadpole column. Any tadpole data in the LogPlot data file that is flagged with the same name will be plotted in this Tadpole column. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Tadpole column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see Moving and Resizing Log Body Components, page 72). Note that the size of the symbols plotted into the Tadpole column can be either fixed or determined by size declarations in the data file.

Frame Column: If this box is checked, the column will be bounded by a solid-line rectangle.

Designing Your Logs

Style: Choose Solid (filled circles), Circle (open circles) or Crossed Circle (open circles with an "x" inside).

Color: Choose Column-Based if you have declared colors for each measurement in the data file. Choose Fixed to select a constant color for the tadpole symbols.

Fixed or Default color: Click here to choose a color for the tadpoles if you've chosen Fixed, above, or for any Column-Based colors that are not declared.

Size:

Choose **Fixed** for the tadpole symbols to be a constant size. In the prompt, type in the size, in inches or centimeters, for the tadpole circles. In the example above, the tadpole circles will be 1/10th inch in width.

Or, you can choose **Value-Based** if you want the tadpole symbols to be scaled based on a listing of values in the data file. If you choose this option, type into the **Minimum Size** prompt the size, in inches or centimeters, for the symbols with the lowest values. Type into the **Maximum Size** prompt the size for the symbols with the highest values listed. See the Tadpole data tab for details about how to set up the tadpole values.

6. Click on the **Grid** tab to set up any horizontal and/or vertical grid lines for the column. See Setting Up Grid Lines (page 96) for more information.
7. To accept the displayed information, click the **Apply** button. You will see the Tadpole column placed in the design screen. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
8. To close the Tadpole Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Tadpole Column, right-click on the Tadpole Column and select **Edit Entity**, or find the Tadpole Column in the **View Entity List** and choose the **Edit** button.

Adding an Interval Text Column

Use: An Interval Text column is used to plot depth-related text that is not associated with a lithologic pattern. Unlike a regular Text Column, whose data is listed with a single depth, an Interval Text column has data that is entered with both a top and bottom depth. Consequently, Interval Text can be centered within the depth intervals, and the program can plot dividers between intervals. This is commonly used to plot sample numbers, types, and parameters. Unlike a Lithology Description column, Interval Text columns do not link to graphic pattern designs.

How it works: As you compile your log in LogPlot, the program will look for text listed in an Interval Data tab of the same name, and plot it in the Interval Text column at the indicated depth.

Alternatives: Text that is to be associated with lithologic patterns is designed with the Lithology Description Column tool. Text that is to be plotted vertically is designed with the Vertical Text Column tool. Text that is listed with a single depth rather than an interval is designed with the Text Column tool.

LogPlot data tab: Interval Text columns are linked to data entered into Interval-Data tabs (page 164).

How to...**Create an Interval Text column in a log design**

1. Access the Log Designer window.
2. In the toolbar pane to the left of the design window, click the Log Body Tool Button



if necessary to display the log body buttons.

3. Select the **Interval Text Column** button  from the toolbar. (Or, you can use the menus: Tools / Log Body Items / Interval Text Column.)

The pointer will change shape to a "Int" for placing the column on the design screen.

4. Place the Interval Text column cursor where you want the left edge of the column to be, in the log body portion of the design screen, and click the left mouse button to place it.
5. Enter the column settings in the displayed window.

 A dialog box titled "Interval Text Options" with a close button (X) in the top right corner. It contains several sections:

- Name:** A text box containing "Sample".
- Position:** Two text boxes labeled "Left" and "Right" with values "1.3438" and "1.8333" respectively.
- Options:** Two checked checkboxes labeled "Frame Column" and "Frame Sample". Below them is a "Font" button and a color selection dropdown menu.
- Vertical Alignment:** Three radio buttons labeled "Top", "Center" (selected), and "Bottom".
- Horizontal Alignment:** Three radio buttons labeled "Left", "Center" (selected), and "Right".
- Margin:** A text box containing "0.0625".

Name: Enter the name for the Interval Text Column. Any text entered in a LogPlot Interval Text data tab with the same name will be plotted in this column. The name can be up to 60 characters in length, including spaces.

Position: These coordinates determine the horizontal placement of the Interval Text Column in the body of the log. The horizontal coordinates are expressed in decimal inches or centimeters relative to the left edge of the design screen. You may change the column's position by editing these values, or by widening/narrowing the column itself on the work screen (see *Moving and Resizing Log Body Components*, page 72).

Frame Column: If this box is checked, the column will be bounded by a solid-line rectangle.

Frame Sample: If this box is checked, each interval will be separated from the next by solid lines.

Designing Your Logs

Font: Use this button to retrieve the Font dialog box where you can establish the font type, style, size, and color to be used for the interval text. If, after you compile your data for this log design within LogPlot, you find that the characters are too large or too small for the given log scale, you may access the font settings again using the **Font** button.

Color: Use this button to select a color for the text. This may also be selected using the **Font** button, above.

Vertical Alignment: Choose whether the text is to be aligned at the top, middle, or base of the defined interval. The example below shows three interval text columns side-by-side, with top-, middle-, and bottom-aligned text.

S464	6-7	1.3	...
S465	5-8	1.3	...
S466	47-38	0.7	...
S467	17-11	NR	...
S468	22-11	1.8	...
S469	9-5	1.8	...
S470	14-9	NR	...
S471	7-6	0.6	...
S472	6-6	1.7	...
S473	11-9	1.7	...
S474	6-7	1.3	...

Horizontal Alignment: Choose how the text is to be aligned horizontally within the column.

- To accept the displayed information, click the **Apply** button. You will see the Interval Text column placed in the design screen. You may continue to adjust the settings if necessary; remember to click **Apply** any time you want your changes applied.
- To close the Interval Column Setup window, click the **Close** button.

Review the Settings

If you need to access the Options window you can: Double-click on the Interval Text Column, right-click on the Interval Text Column and select **Edit Entity**, or find the Interval Text Column in the **View Entity List** and choose the **Edit** button.

Listing Log Entities

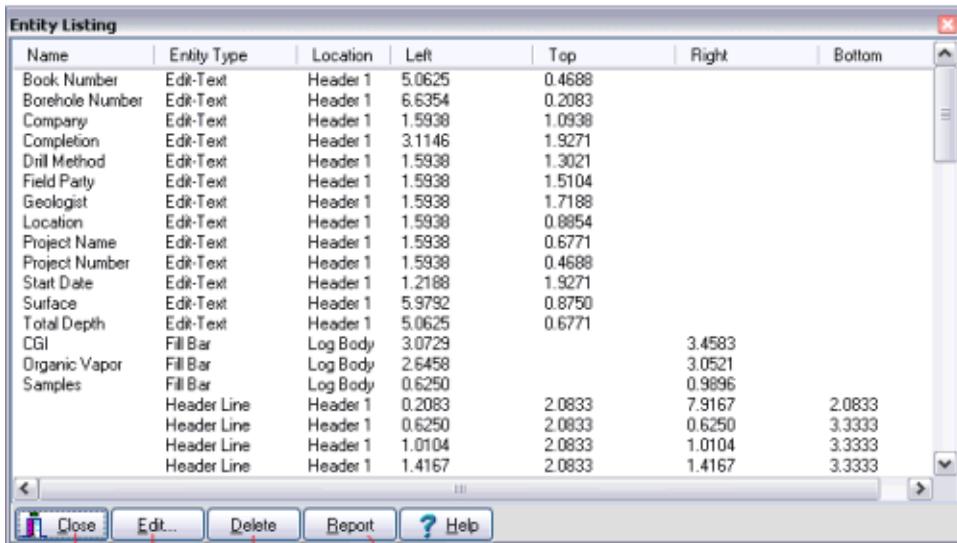
The Log Designer permits you to view a listing of all of the items that are currently included in the open log design:

1. Select the **View Entity List** button from Log Designer's left-hand toolbar , or the same command from the **Edit** menu.

The program will display a window that looks like this:

Each item that you've inserted into the log design - header, footer, & body items - will be listed here.

Click on any column heading to sort the list by that column.



Name	Entity Type	Location	Left	Top	Right	Bottom
Book Number	Edt-Text	Header 1	5.0625	0.4688		
Borehole Number	Edt-Text	Header 1	6.6354	0.2083		
Company	Edt-Text	Header 1	1.5938	1.0938		
Completion	Edt-Text	Header 1	3.1146	1.9271		
Drill Method	Edt-Text	Header 1	1.5938	1.3021		
Field Party	Edt-Text	Header 1	1.5938	1.5104		
Geologist	Edt-Text	Header 1	1.5938	1.7188		
Location	Edt-Text	Header 1	1.5938	0.8854		
Project Name	Edt-Text	Header 1	1.5938	0.6771		
Project Number	Edt-Text	Header 1	1.5938	0.4688		
Start Date	Edt-Text	Header 1	1.2188	1.9271		
Surface	Edt-Text	Header 1	5.9792	0.8750		
Total Depth	Edt-Text	Header 1	5.0625	0.6771		
CGI	Fill Bar	Log Body	3.0729		3.4583	
Organic Vapor	Fill Bar	Log Body	2.6458		3.0521	
Samples	Fill Bar	Log Body	0.6250		0.9896	
	Header Line	Header 1	0.2083	2.0833	7.9167	2.0833
	Header Line	Header 1	0.6250	2.0833	0.6250	3.3333
	Header Line	Header 1	1.0104	2.0833	1.0104	3.3333
	Header Line	Header 1	1.4167	2.0833	1.4167	3.3333

Closes the Entity List

Deletes the highlighted item

Creates a CSV report of the Entity List

Accesses the Options window of the highlighted item

See page 66 for more information.

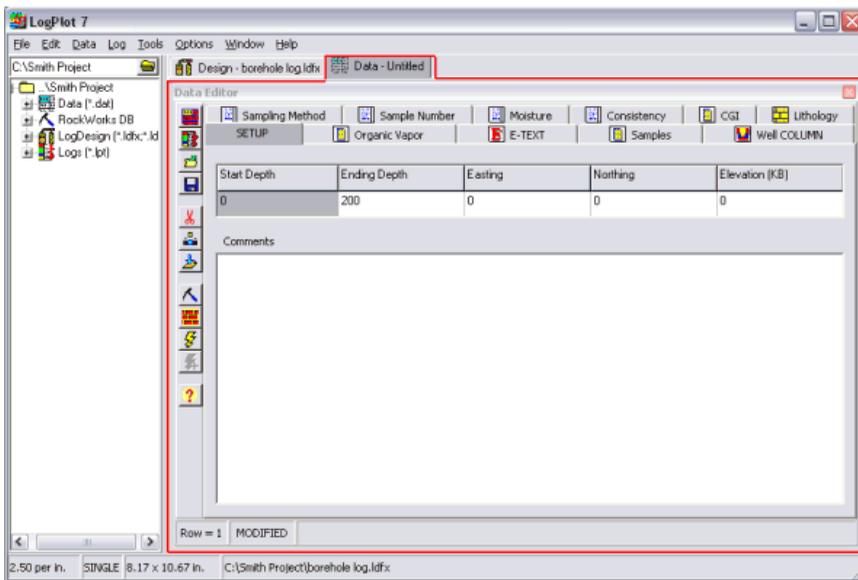
Chapter 3 - Entering your Data

LogPlot Data Editor Introduction

The LogPlot program contains 3 different windows:

- The **Data Editor**, used for entering data. This is discussed in this section.
- The **Log Design** window, for creating or editing the layout of the log.
- The **Log View** window, for viewing and printing compiled graphic logs.

The LogPlot Data Editor is the first window that you will see when you start the LogPlot program.



In this Editor:

- You can create new data files by typing in or cut-and-pasting information.
- You can open existing data files, created in LogPlot 7, LogPlot2005, LogPlot2003, LogPlot2001, LogPlot98, LogPlot97, or LogPlot v.1.
- You can make changes and additions to any data files.
- You can create a blank data template for any log design and update an existing data file for design changes.
- You can import data from RockWorks, Excel, LAS, DBF, and text files.
- You can export data from LogPlot to Excel or LAS format. You can export to RockWorks borehole format using a free, stand-alone program.

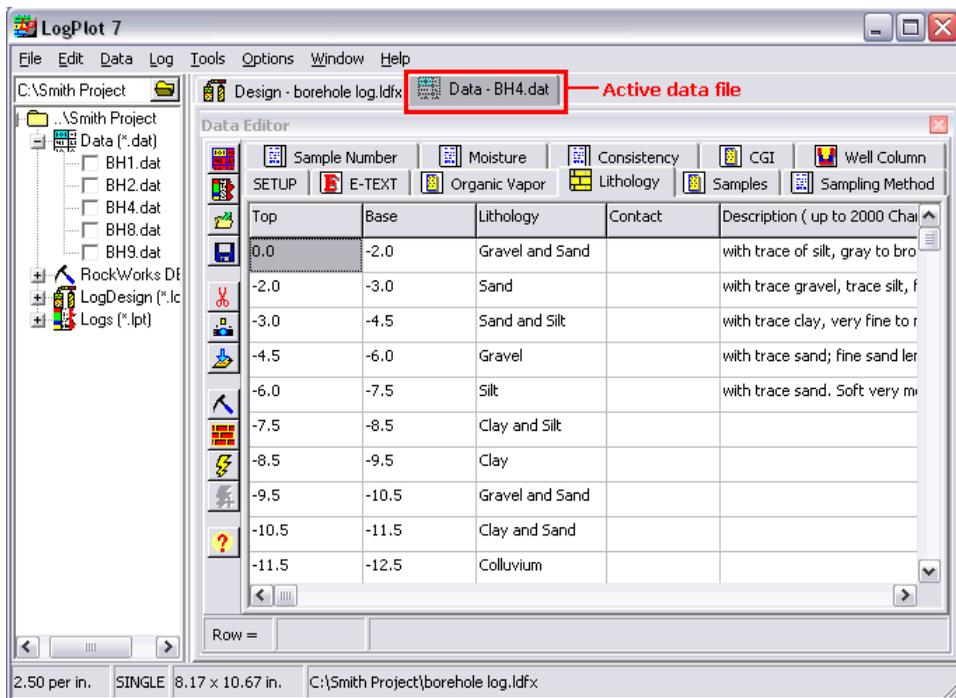
Entering Your Data

The LogPlot Data Editor displays different blocks of data (lithology descriptions, curve listings, etc.) in tabbed data “pages” where you can type, point-and-click, or cut-and-paste the information. Throughout this documentation, we refer to these data pages as “tabs.”

Accessing the Data Editor

If you cannot see the Data Editor because it is hidden behind the Design or Plot window, follow these steps to access it:

1. Click on the Data Editor tab to bring that window to the front. This tab is labeled "Data".

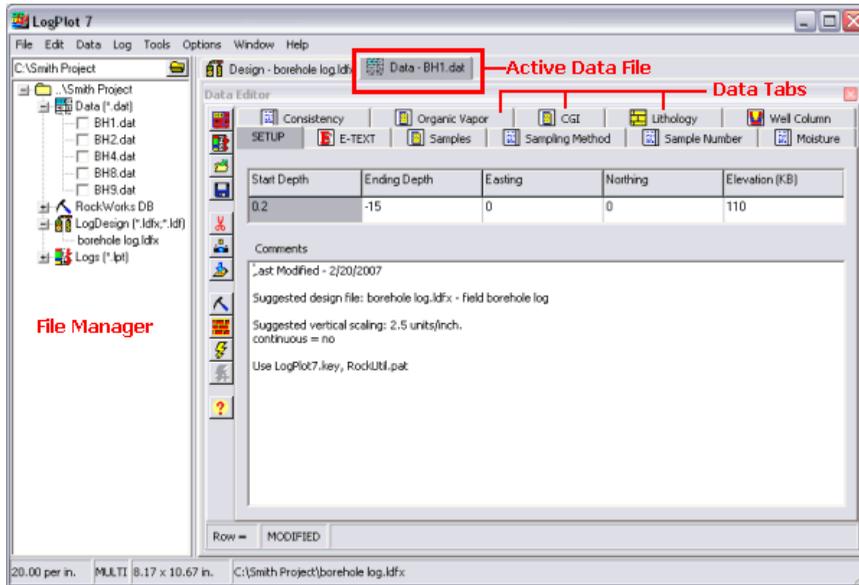


2. If there are no Data Editor windows open, use LogPlot's **File / New / Data Editor** command to open a new Data Editor window.

LogPlot 7 allows you to keep more than one data file open at a time. All are accessible by clicking on their stick-up tabs, labeled with the file's name.

The Data Editor Window

Here is a sample of how the Data Editor screen looks with a sample data file loaded:



The "Setup" tab establishes the top, base, and location of the drill hole; it is the only required tab. Each other tab within the Editor corresponds to an item within the log's design file (.ldfx) and contains the data to be plotted in that item.

To view the data contained in any of the data tabs, simply click on the tab name and it will be brought to the foreground.

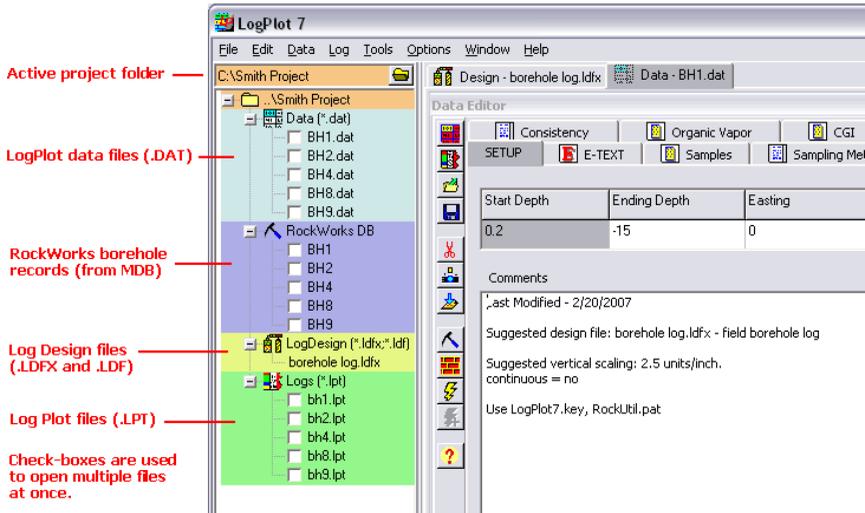
LogPlot allows you to keep more than one data file open at a time. All are accessible by clicking on their stick-up tabs, labeled with the file's name.

The LogPlot File Manager

The File Manager is displayed in a pane along the left edge of the LogPlot program window. It is used to display the LogPlot-related files in the current project folder, and allow you to open them and (for DAT files) compile them:

- LogPlot data files (.DAT) - opened into the Data Editor window.
- LogDesign files (.LDFX and .LDF) - opened into the Log Design window.
- Log Plot files (.LPT) - opened into the Log View window.
- RockWorks borehole/well files contained in an MDB - opened into the Data Editor window.

Entering Your Data



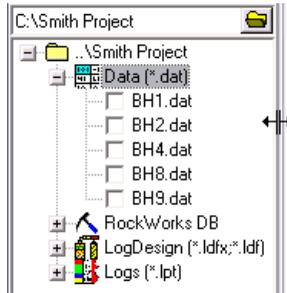
File Manager Right-Click Options

If you right-click anywhere in the File Manager pane, you'll see the following options:

- **Open Selected Files:** Any .DAT, .LPT, and RockWorks boreholes that are checked will be opened into their respective windows.
- **Compile Selected Files:** Any .DAT files that are checked will be compiled using the currently-active log design.
- **Select All:** Inserts a check-mark in all listed .DAT, .LPT, and RockWorks borehole files. (Log Design files are not shown with a check-box because you can only have one design open at a time.)
- **Unselect All:** Removes check-marks from all available boxes.
- **Refresh Files:** Reloads the names of the files in the current project folder.
- **Hide:** Hides the File Manager Pane. You can re-activate the display of the pane using the Window / Show File Manager option.

Displaying/Hiding/Resizing the File Manager Pane

- Hiding the pane: Select the **Window / Show File Manager** option, in the main LogPlot menu, to remove the check-mark. Or, right-click in the File Manager pane and choose Hide.
- Displaying the pane: Select the **Window / Show File Manager** option, in the main LogPlot menu, to remove the check-mark.
- Widening/narrowing the pane: Use your mouse to "grab" the right edge of the File Manager pane and drag it to the left or right to make the pane smaller or larger.



Where Do I Start Entering/Editing Data?

With the LogPlot program running there are several options for getting started with entering your data.

Plan 1: Modify an Existing LogPlot Data File

1. Access the Data Editor window by clicking on the LogPlot Data Editor tab.
2. Open the existing LogPlot data file: Select the **File** menu from the Data Editor menu. Select the **Open** command, and select the data (DAT file) you wish to modify.
This could be a data file you created earlier. Or, it could be a sample file installed with the program (see Sample Files, page 292, for details).
3. Add data to the existing data tabs: Type it in, copy/paste it from another document, import (**File / Import**) into a single tab.
4. Add new data tabs (**Data / New Data Item**) or delete unused data tabs (**Data / Delete Data Page**) as necessary. Or, use the automatic Update tool (**Data / Update Data Template from Log Design**) to add missing tabs to the data listing.
5. Save the data file (**File / Save** or **Save As**).

Plan 2: Import a Data File

LogPlot imports several types of data from other software programs: LAS (geophysical data - elogs, sonic logs, etc.), RockWorks (BH borehole files), Excel.

1. Create a new Data Editor window (**File / New / Data Editor**).
2. Import the data (**File / Import / LAS** or **RockWorks** or **Excel**). See Importing Data, page 206.

Plan 3: Create a Blank Data Template for the Current Log Design

1. Access the Log Designer window and open an existing log design for which you want to create a data file. This is now considered the default log design.
2. Select the Log Designer **Data / Create New Data Template** command.

The program will create a new data window which will contain data tabs that are specific to the items in the active log design. For example, if the design contained a lithology pattern column named "Rock Types" and a curve column named "Drilling Rate", then these tabs would be added to the Data Editor: a "Lithology" tab named "Rock Types" and a Curve tab named "Drilling Rate."

Entering Your Data

4. Add data to the existing data tabs: Type it in, copy/paste it from another document, import (**File / Import**) into a single tab.
5. Add new data tabs (**Data / New Data Item**) as necessary.
6. Save the data file (**File / Save** or **Save As**).

Note that LogPlot can also create a complete data template upon program startup.

Plan 4: Create a Data File from Scratch

1. Access the Data Editor window by clicking on the LogPlot Data Editor tab.
2. Create a new data file (**File / New / Data Editor**).
3. Add data tabs for your different data types (**Data / New Data Item**).

See the Data Tab Summary (page 148.) for a listing of all of the different kinds of data you can enter into LogPlot.

Managing the Data Files

Data Editor Files Introduction

LogPlot data files that you create in the Data Editor window are stored on disk as ASCII (text) files with a fairly generic "DAT" file name extension. Within the ASCII file the different kinds of log data are grouped into distinct blocks, and that's how LogPlot distinguishes lithologic descriptions from curve data, from downhole symbols, etc. (The internal structure of the files is discussed in the Reference section.)

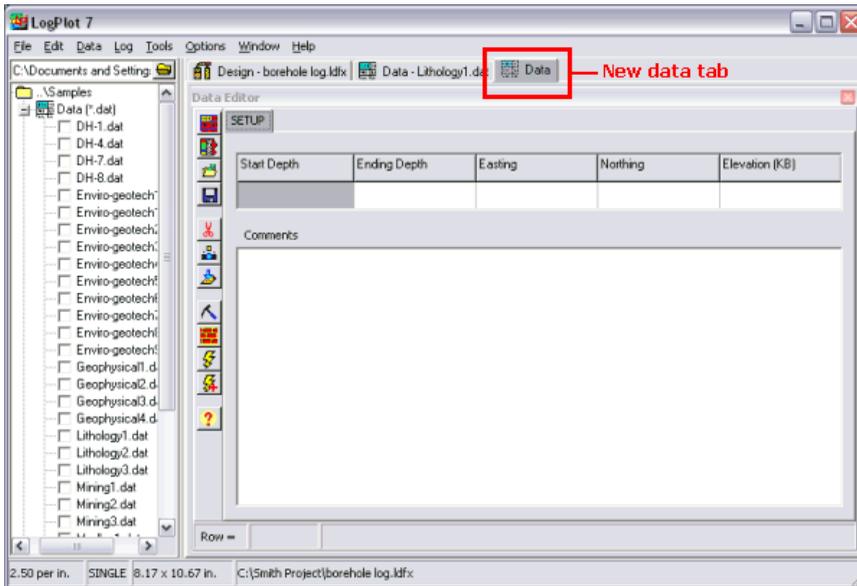
LogPlot lets you keep more than one data file open at any time.

Create a New Data File

Follow these steps to create a new data file in LogPlot:

1. From either the Log Designer window or from an existing Data Editor window, click on the **File** menu and click **New**.
2. In the pop-up window, click **Data Editor**.

LogPlot will display a new data window, with an unnamed data tab.



3. At this time you can type or paste in data, add new data elements, and save the file.

! LogPlot also creates a new data window automatically upon program startup.

See also: Updating Your Data File for a Log Design (page 194) for information about automatic data-file creation.

Open a Data File

To open a LogPlot data file (.DAT) that exists already on disk, you have a few options:

Using the LogPlot File Manager

1. Open a project folder into the File Manager
2. Double-click on the DAT file you wish to open.

Using the LogPlot menus

1. Click in an existing Data Editor window or (if none are open) create a new Data Editor window.

2. In that Data Editor window, select the **Open** button  from the Data Editor's toolbar, or the **Open** command from the Data Editor's **File** menu.

The program will display a prompt window in which you may specify the file to open. The default file type, when you select **File / Open** from the Editor window, is .DAT (ASCII text). If you are opening an old DAT file, be sure to set the **Files of Type** to "Space Delimited Data". You may also specify "TXT" files. If your text file has another file name extension, select the "All Files" file type, and the program will display all located files.

Entering Your Data

3. Select the file you wish to open (accessing other drives or directories as necessary) by clicking on the name to highlight it.
4. Click on the **Open** button.

The program will read the file and display the data in the appropriate data tabs in the Editor window.

Notes:

- LogPlot 7 will open data files that were used in LogPlot v.1 or LogPlot97, and will create the necessary data tabs in which to display the data. However, if your data blocks have errors in their syntax, you may get unpredictable results as the program tries to put them into tabs.
- LogPlot 7 will open LogPlot98, LogPlot2001, LogPlot2003, and LogPlot2005 data files seamlessly, though it will translate any <Space> delimiters to <Tab> characters when the DAT file is saved. You may need to specify "Space Delimited Data" as the file type to be opened.
- In LogPlot 7, you can open a .DAT file from within any of the program windows, such as the Log Designer, but you will need to be sure to specify .DAT as the file type. The program will open the file into a new Data Editor window..

Open Data Files using the File Manager

How to...

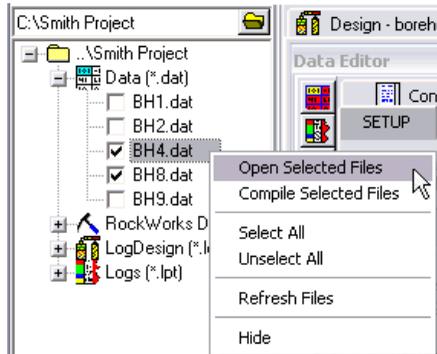
Open a Single Data File

1. Expand the File Manager's **Data** heading, as necessary.
2. Double-click on the DAT file you wish to open.

LogPlot will open the selected data file into the Data Editor window. You can have multiple DAT files open at the same time.

Open Multiple Data Files

1. Expand the File Manager's **Data** heading, as necessary.
2. Insert a check-mark next to the names of the DAT files you wish to open.
3. Right-click in the File Manager.
4. Choose Open Selected Files from the pop-up menu.



LogPlot will open the selected files into the Data Editor window.

Open RockWorks MDB Borehole Records using the File Manager

LogPlot 7 has the ability to load borehole records from a RockWorks2006 MDB database.

How to...

Open a Single Borehole Record

1. Expand the File Manager's **RockWorks DB** heading, as necessary.
2. Double-click on the name of the borehole you wish to open.

LogPlot will load the selected data into the Data Editor window. You can have multiple files open in the Data Editor at the same time.

Open Multiple Borehole Records

1. Expand the File Manager's **RockWorks DB** heading, as necessary.
2. Insert a check-mark next to the names of the boreholes you wish to open.
3. Right-click in the File Manager.
4. Choose **Open Selected Files** from the pop-up menu.

LogPlot will load the selected data into the Data Editor window. You can have multiple files open in the Data Editor at the same time.

Below is a listing of the comparable data types:

RockWorks data item	LogPlot data item
Location	Setup, Edit Text
Orientation	Orientation
Lithology	Lithology
Stratigraphy	Lithology

Entering Your Data

Intervals (I-Data)	Multi-Interval Data
Points (P-Data)	Multi-Curve
Fractures	Tadpoles
Water Levels	Vertical Text
Symbols	Symbol
Patterns	Well Column
Bitmaps	Bitmap
Vectors	n/a

There are a few other housekeeping details you'll need to do so that your RockWorks borehole data can be displayed in a LogPlot log:

Import your Lithology and/or Stratigraphy Tables

1. Use LogPlot's **Tools / Edit Keywords** option to access the Keyword Editor.
2. Use its **File / Import** command to import your RockWorks lithology table or stratigraphy table into LogPlot.
3. Use its **File / Append to Current File** command to append the keywords to your existing table.

Open/update the RockWorks Log Design

1. In the Log Designer, open the sample file "RockWorks BH.Idf".
2. Use the Data Editor's **Data / Check Data Against Log Design** command to see where the sample layout doesn't match your imported data file.
3. Make the necessary changes to the design file. You will probably need to remove some design items, and add others that are missing. Be sure to check the curve and bar graph column ranges to assure they match your data range.

NOTE:

This process applies to RockWorks2006 (and later) MDB-based borehole data only. If you wish to open RockWorks2004 or RockWorks2002 .BH borehole files, use the File / Import / RockWorks2004/2002 Boreholes option.

Add Data Tabs

If you have a data file displayed in the Data Editor (from creating a new file or from opening an existing file, you can add new data tabs to the file.

1. Click on the Editor's **Data** menu and choose the **New Data Item** command.

2. In the pop-up menu that is displayed, click on the type of data page you wish to add. These correspond to the items that might be included in your log design.

The program will prompt you for the item's name, displaying a list of the comparable items in the current log design. For example, if you have added a Text Column data tab, and the current log design contains 8 different Text Columns, it will display the names of the 8 Text Columns from the log design.

3. Select the name for the data tab, or type in a new name if it's not shown in the list, and click **OK**.

The program will insert a new data page with the requested name in the current data file.

See also:

Automatic Data File Tools (page 191) for automatic ways to synch the data file with the log design.

Data Tab Summary (page 148.) for a summary of the data pages.

Delete Data Items

Any time that you wish to delete an entire tab or page of data from the data file currently displayed in the Editor, follow these steps:

1. Click on the tab that you wish to remove, to make it active.
2. Right-click in the body of the data listing and select the **Delete Data Page** command. Or, you can select the **Delete Data Page** command from the **Data** menu.
The program will ask you to confirm this operation.
3. Click on **Yes** if you wish to proceed with the page deletion, or click on **No** to cancel the page deletion.

If you confirmed the operation, the program will remove the entire data tab from the display.

Notes:

! This command deletes all of the data in the active data tab, and the data tab itself. If you wish to delete *some* of the data from within a tab, simply highlight the text to be removed and press the Delete key on your keyboard.

If you made a mistake, do not save the data file. Instead, use the **File / Open** command to re-open the same data file, answering **NO** to the prompt that asks whether you wish to save the current changes. Be warned, however, that any other editing changes you had made since the last time you saved the file will also be lost.

Save a Data File

Changes you have made to the current data file displayed in the Editor can be saved on disk using the **Save** command.

1. Select the **Save** button  from the Data Editor's toolbar, or the **File** menu's / **Save** command.

If the data file already has a name (as shown in the program title bar), selecting **Save** will save the current version on disk, under the same name.

Entering Your Data

If the data file is **untitled** (as shown in the program title bar), the program will display a standard Windows Save As dialog box, in which you can specify the name under which the file is to be saved. The default file type is ASCII text with the file extension ".DAT".

2. Type in the name for the file (accessing other drives or directories as necessary).
3. Choose the **OK** button.

The program will save the data in the current Editor window on disk.

If you wish to save an existing data file under a *different* file name, use the **Save As** command.

1. Select the **Save As** command from the Data Editor's **File** menu.

The program will display a standard Windows Save As dialog box, in which you can specify the name under which the file is to be saved. The default file type is ASCII text with the file extension ".DAT".

2. Type in the name for the file (accessing other drives or directories as necessary).
3. Choose the **OK** button.

The program will save the data in the current Editor window on disk.

Print a Data File

You may output the data contained in the Editor window to your printer using the **Printer Font**, and **Print** commands (Data Editor's **File** menu).

! To print the plotted log *diagram*, use the View window's Print command.

To print the data file, follow these steps:

1. Click in the Data Editor window that contains the file you want to print.
2. Select the **Page + Printer Setup** command from the **File** menu.

This command is used to establish the type of printer you are using. (It's also used to define the paper size for your log, which won't affect data printing.)

In the upper, Printer Info section of the window, be sure the active printer that's listed is the one to which you wish to send the data print job. To change the printer, click on the **Printers** button, and the program will display a dialog box with a pop-up list box containing the printers that are currently installed within Windows. You may select the printer you wish to use. The **Options** button will display additional printer configuration dialog boxes for the selected printer. Many of these options will also be used during log compiling to establish page size.

See your Windows documentation for information about installing printer drivers, and see your printer's documentation regarding specific printer settings.

When you have established the printer settings to your satisfaction, choose the **OK** button to return to the LogPlot menu. Note that once your printer is set up within the program, you will not need to re-select it unless the setup changes in some way.

3. Next, select the Data Editor's **File / Printer Font** command to establish the font type to be used in printing the data file's text listing.

In the displayed window, select from the available fonts, font styles, sizes, and effects by clicking on your choices.

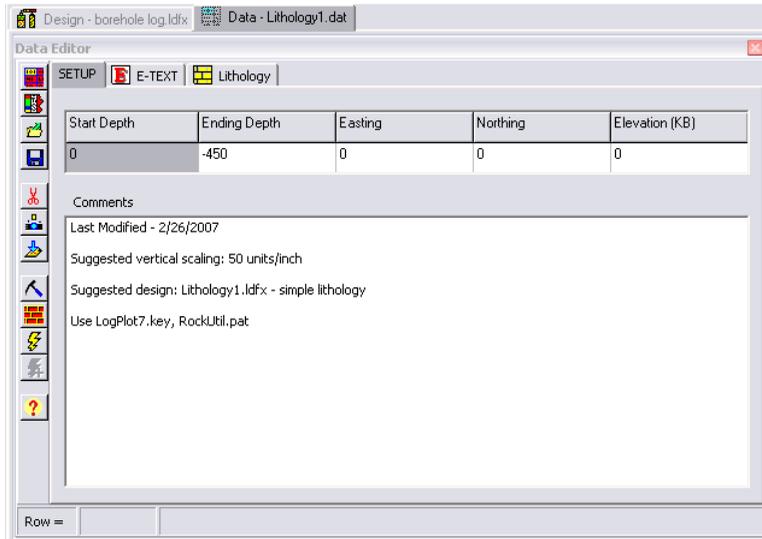
Click on the **OK** button in the Printer Font dialog box to return to the Data Editor window.

- Then, to send the data file to the selected printer, select the **Print** command from the Data Editor's **File** menu.

When you select this command, the program will display a dialog box displaying print options specific to your printer.

Choose the **OK** button when you are ready to have the file printed.

Note that the file is printed in its continuous text form, as it is stored on disk. It will not be organized into tabular pages as it is displayed in the editor. For example, a file that looks like this in the Editor:



Will look like this when printed on paper:

```
:Last Modified - 2/26/07
:
:Suggested vertical scaling: 50 units/inch
:
:Suggested design: Lithology1.ldfx - simple lithology
:
:Use LogPlot7.key, RockUtil.pat
:
SETUP: 0 -450 0 0 0
<COL_WIDTH> 177 185 185 185 185 </COL_WIDTH>
```

```
EDIT-TEXT: Logger
Sam Peabody
```

```
<COL_WIDTH> 160 740</COL_WIDTH>
LITH: Lithology
0 -18 DOLOSTONE^
-18 -40 SAND^
```

Entering Your Data

```
-40 -45 SHALE^
-45 -95 LIMESTONE^
(etc)
-410 -425 VERY COARSE SANDSTONE^
-425 -450 BASEMENT^
END-DATA:
<COL_WIDTH> 80 80 80 80 475 </COL_WIDTH>

END-LOG:
```

Close a Data Window

LogPlot 7 allows you to keep multiple data files open at any time. You can distinguish the data files by their names shown on the stick-up tabs in the Data Editor window.

Follow these steps to close a data file:

1. Access the data window you wish to close.
2. Choose the **File / Close Data Editor** command. Or, click the small  button in the upper-right corner of that data window.

If there have been changes to this file that have not been saved, the program will prompt you as such. Click **No** to discard any changes and close the window. Click **Yes** to save the file, enter a file name in the displayed window, and click the **Save** button.

The program will close the indicated data file.

Entering the Data

Data Tab Summary

The LogPlot 7 program has a Data Editor window that uses data "tabs" to organize the different kinds of information that can be plotted on the graphic log.

This section discusses how you set up the data tabs themselves and enter data into them. These are discussed in detail in the following topics.

Setup tab: Required. Used to enter the depths represented at the top and base of the data, and the XYZ location coordinates for the drill hole.



Bitmap tab: Used to enter the name of one or more graphic image files to be inserted into a Bitmap column in the body of the log, and the beginning and ending depths at which they should be plotted.



Cross-Plot Curves tab: Here you may enter depths and two columns of measured values to be plotted in a Cross-Plot Curve column.



Curve tab: In this tab you enter depths and a single column of measured values to be plotted in a Curve column (or a Cross-Plot Curve column) in a log.



Edit-Notes Tab: Used to enter extended, wrappable text in the header or footer of the log.

 **Edit-Text tab:** Used to enter the text to be plotted in the changeable text fields in a log header or footer (names, dates, locations, etc.).

 **Fillbar tab:** In this tab, you can enter depth intervals at which vertical pattern bars will be plotted on the log.

 **Horizontal Line Tab:** Used to enter specific depth(s) at which one or more horizontal lines are to be plotted on the log.

 **Interbed Tab:** Used to enter specific depth interval(s) for interbeds that will overplot an existing Lithology Pattern column.

 **Interval-Data tab:** Used to enter depth intervals and a single column of measured data to be plotted as bar graphs on the log, and/or as value labels in a bar graph labels column, and/or as alphanumeric text in an Interval Text column. (Replaces the Histogram tab.)

 **Lithology tab:** This tab is used to enter depth intervals and associated lithologic keywords and descriptions for those intervals, to be plotted as patterns in a Lithology Pattern column and/or as text in a Lithology Description column on a log.

 **Multi-Curve tab:** This tab is used to list depths and two or more columns of measured data to be plotted as point to point curves on a log, in a Curve column or a Cross-Plot Curve column.

 **Multi-Interval-Data tab:** Used to list depth intervals and two or more columns of measured data to be plotted as bar graphs on the log, and/or as value labels in a bar graph label column, and/or as alphanumeric text in an Interval Text column.

 **Orientation tab:** This tab is used to enter any downhole survey for non-vertical wells. Though LogPlot always displays wells as vertical, the depth/elevation Scale Bar allows display of true survey elevations/depths down the log instead of/along with observed depths, and Curve columns can display true vertical depth based on the survey data.

 **Percent tab:** This tab is used to specify the keywords for the rock types to be represented in the Pattern % column, and to list the depth / elevation intervals and the representative percentages of each rock type.

 **Scale Table tab:** *NEW!* Used to define custom scale intervals for curve columns.

 **Symbol tab:** Used to enter depths and symbol numbers for plotting graphic symbols on a log.

 **Tadpoles tab:** This tab is used to enter downhole structural information (dip angle, dip direction) for display in a Tadpole column.

 **Text-Column tab:** This tab is used to enter general text (comments, sample numbers, etc.) and the depth at which it is to be plotted on the log.

 **Vertical-Text tab:** This tab is used to enter depth intervals and text to be plotted vertically in the body of the log.

Entering Your Data



Well-Column tab: In this tab you enter the depth intervals, inner and outer diameter measurements, and keywords for the well construction materials.

Notes:

Your LogPlot data files may contain virtually any number and combination of the available data items.

- If all of the items in the data file have corresponding items in the current log design, compiling the log will deliver a graphic log with all data items represented.
- If your data file contains **fewer data items** than are contained in the current log design, the un-referenced portion(s) of the design will simply be left blank when the log is compiled. For example, if your data file contains only lithologic descriptions, and you compile using a log design that contains description *and* bar graph columns, the bar graph columns will simply be left blank.
- If your data file contains **more data items** than are contained in the current log design, the extraneous data items will simply be ignored. For example, your data file contains both lithologic description and quantitative interval data, and your log design contains a lithology pattern column only, the quantitative data will simply be ignored during compiling.
- You can even compile a data file that has no data yet inserted! The compiled log will simply contain blank columns.

Tips:

- To cross-check the tabs in the current data file against the entities in the current log design, use the **Data / Check Data against Log Design** command.
- To update the data file with changes in the current log design use the **Data / Update Data Template from Log Design** tool.

The LogPlot program was shipped with a variety of demo data files (*.DAT) that illustrate the use of the data tabs. These files were installed in the \My Documents\LogPlot 7\Samples folder. Feel free to refer to these files as you read through this documentation and as you construct your own data files. (Each data file also has an associated LogDesign format file - *.LDFX - for your reference in designing logs.) See the sample file summary in the Reference section, page 292.

Setup Tab

Use: This data tab is used to "set up" the data file, establishing the depths at the top and base of the log, and the location coordinates for the drill hole. It also contains a text window for entering comments and notes that you can use for your reference.

Corresponding log design component: There is none.

How to...

Enter the Setup Data

The Setup tab is created automatically each time a new data sheet is created. There can be only one Setup tab per file.

1. Enter the data as illustrated below.

SETUP

Start Depth	Ending Depth	Easting	Northing	Elevation (KB)
0	-450	0	0	0

Comments

Last Modified - 2/26/2007
 Suggested vertical scaling: 50 units/inch
 Suggested design: Lithology1.lfdx - simple lithology
 Use LogPlot7.key, RockUtil.pat

**Notes, for your reference only.
 They are ignored during compilation of the log.**

Start Depth, Ending Depth: In these cells, you enter the depth or elevation at the **top** and at the **base** of the log. They are used by the program to define the vertical coordinate system and range for the log.

Positive versus negative depths: Your depth data can be entered as either negative or as positive values. Just be sure you are consistent... if the **Ending Depth** established here is entered as a negative value, be sure that all other depth values (for curves, lithology, etc.) are also entered as negatives; if the Ending Depth is a positive value, be sure all depths are entered as positives. (See Log Settings, page 276, for declaring positive depths.)

! These starting and ending depth values may span the entirety of your data or may list just a **subset** of your data in order to plot just a portion of your log. Prior to compiling a log (**Log / Compile a Log** command) the program will read the top and base declared here and will display them as defaults. You then have the opportunity to override the default settings to plot more or less data.

Easting, Northing: In these cells, you must enter the **x and y location** coordinates for the top of the well.

You may use virtually any coordinate system that you wish, though if you will be exporting the data into RockWorks, you should be sure that the location coordinates are in the same units as your depths.

If unknown you may set them both to 0.

Elevation (KB): In this cell, you enter the **elevation** at the top of the well. The program will use this to compute elevations if your log design contains an elevation scale bar:

Entering Your Data

If your data are recorded by depths, this **Elevation** value should represent the elevation at the **Start Depth** of the log. If your data values are recorded by elevations, this variable should be set to 0.

If your log contains no scale bar that represents elevations in the log, you may enter 0.

If you intend to export your LogPlot data to RockWorks, you should be sure that the surface elevation units (meters or feet) are the same units as your depths and your X,Y coordinates.

For more information, see "Depth versus Elevation" on page 189

Comments: In this scrolling text box, you can enter reference information about the data file.

This is typically used to list the names of log formats, keywords, patterns, and/or symbols that correspond to the data file, and to note the vertical scale at which the log should be compiled.

These comments are not required.

If you are opening into LogPlot 7 a data file that you used in LogPlot98 or LogPlot v.1, the program will display in this window any comments that were flagged with a colon (":").

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Bitmap Tab

Use: The Bitmap tab is used to specify the name of a graphic image (in BMP, JPG, TIFF, WMF, EMF, PNG, TGA, PCX format) and the beginning and ending depth at which it should be plotted in the Bitmap column in the body of the log. This can be a nifty way to place in a log a bitmapped picture of core samples, fossils, raster log, or other graphic images. Multiple bitmaps may be plotted in a single column.

! Bitmaps in the header or footer of the log (logos, etc.) are inserted into the log design itself. See Header/Footer Pictures (page 46).

Corresponding log design component: Data entered into the Bitmap tab will be plotted within the Bitmap column (page 119) of the same name, if any.

How to...

Enter the Bitmap Data

1. To add a new Bitmap tab to the current data file, you have two choices:

Automatic: If there's already a Bitmap column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Bitmap tab in the current data file. The program will know how to name the tab based on the log design information.

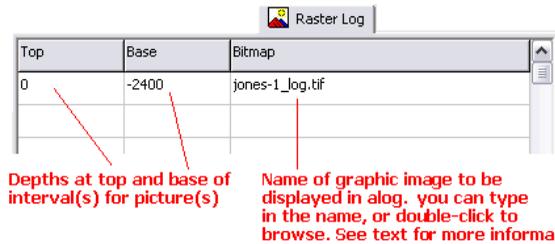
Manual: Select the **Data / New Data Item / Bitmap** command to manually insert a Bitmap tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Bitmap column in the log design to which this data page is to

correspond. In this list the program will show the names of all of the Bitmap columns in the current log design. Or, just type in a name for the tab, and click **OK**.

The program will add to the data sheet a Bitmap tab labeled with the selected name.

2. Enter the data as illustrated below.



Name: The name displayed on the Bitmap tab is used to match the data to a particular Bitmap column in the log design. For example, the information entered under the "Raster Log" Bitmap tab will be plotted in the Bitmap column also named "Raster Log."

This name is declared when you first create the data page (above) and can be edited using the right-click / Edit Entity Name command.

Top, Base: In these columns you must list the depth or elevation and the top and the base of the interval that is to be filled with the image. You may list multiple intervals for a single column.

Bitmap: Here you must list the name of the image file to be plotted in the Bitmap column. You may list multiple files and intervals within a single tab.

! Important: If, in Log Designer, you have set up the Bitmap Column to **link** to the image file to the log rather than imbedding the image in the log, be careful how you enter the file name here and how you manage your files:

- If you enter the name of the file only, with no directory path, as shown in the example above, then the link will also be recorded that way when you save the compiled log. If the compiled log is ever moved to another folder or another computer, and it is re-opened, the program will simply look in the current folder for the image file. As long as you keep the compiled log (LPT) and the image file in the same folder, regardless of where that folder is, the link can be maintained. This will require that the image file is in the same folder as the DAT file when compiling.
- If you enter the full path to the image file (such as "C:\Project_A\Jefferson Site\raster_log_032134.tif"), than that's how the link will be saved in the compiled log. If you move the compiled log to another folder/machine and try to re-open it, the program will look for the linked image using the full path information. If the image file cannot be located, it will be omitted from the log image when opened.

If you have set up the Bitmap Column to **embed** the image file in the log, then the image files can be listed either by file name only or with the full path. It will only be at compile time that the program will look for the image; once saved in the LPT file it will not be linked.

Entering Your Data

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row within the Bitmap data page.

See also the program Help messages (**Help / Contents / Entering Your Data**) for details.

Cross Plot Curves Tab

Use: The Cross-Plot Curves tab is used to enter depths and two columns of measured data to be plotted as point to point curves in a Cross-Plot Curves column.

! Cross-Plot Curves columns can also read data listings from Curve or Multi-Curve tabs.

Corresponding log design component: Data entered into the Cross-Plot Curve tab will be plotted within the Cross-Plot Curve column (page 100) and/or Curve column (page 90) of the same name, if any.

How to...

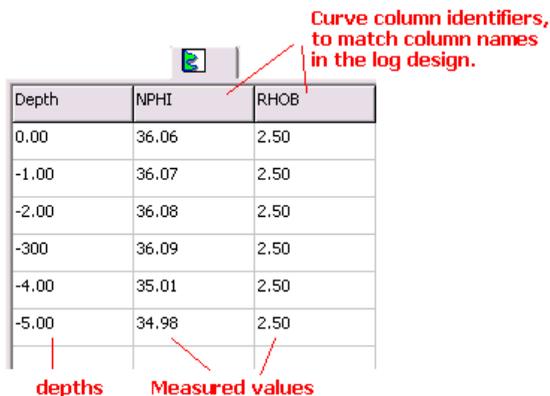
Enter the Cross-Plot Curve Data

1. To add a new Cross Plot Curves tab to the current data file, you have two choices:

Automatic: If there's already a Cross-Plot Curve column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Cross-Plot Curve tab in the current data file. The program will know how to name the tab's curve headings based on the log design.

Manual: Choose **Data / New Data Item / Cross Plot Curves**. The program will display a window in which you can define the names and order of the curves to be entered. In this list the program will show the names of all of the Curve columns and Cross-Plot Curve columns in the current log design. Because this data page references two separate curves, each with its own name, the curve names are listed as the *column* headings in the tab rather than the *tab* heading. For each curve to be listed in this data tab, click on the down-arrow to the right, and select the name of the Curve column or Cross-Plot Curve column to which each is to correspond. Or, just type in a name. Click **OK**. The program will add to the data sheet a Curve tab labeled with the name you selected.

2. Enter the curve data, as shown in the example below.



Curve column identifiers, to match column names in the log design.

Depth	NPFI	RHOB
0.00	36.06	2.50
-1.00	36.07	2.50
-2.00	36.08	2.50
-3.00	36.09	2.50
-4.00	35.01	2.50
-5.00	34.98	2.50

depths Measured values

Depth: In this column you must list the depth or elevation at which the measurements were taken.

Shortcut: Right-click on any cell in the Cross-Plot Curves tab and select **Fill Depth Column** to fill the column with regular depth increments.

If your data are entered as depths (as opposed to elevations), they can be entered as either positive or negative depths, but be sure you're consistent throughout the data.

Columns 2 & 3: These columns list the actual measurements at the listed depths. These measurements will be plotted as point-to-point curves.

The Column Names

The names displayed as column headers within the Cross-Plot Curves data tab are used to match the data to the curve names in the Cross-Plot Curve column in the log design. For example, the data in the "Neutron Porosity" column will be plotted as declared for the "Neutron Porosity" curve in the log design. These names were entered when the tab was first created, above.

To change the names of the headers, right-click on any cell in the Cross-Plot Curves window, and select the **Edit Multi-Column Headers** command.

The Data Listing

To enter the actual curve data into the Cross-Plot Curves data page cells, you can use the <Tab> key to advance from cell to cell, and from the end of one row to the beginning of the next.

Shortcut: If you already have this quantitative data in a tabular format in another application, you can copy the data there and then paste it into the Cross-Plot Curves tab using the **Edit / Paste** command.

If there is no data for a depth, you may note this with a non-numeric entry (such as "ND") or you may leave the interval blank. If the curve is to be plotted as a line, the line will be broken where there is no data. If the curve is to be plotted as a filled curve, then the no-data entries will simply be ignored.

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row within the Cross-Plot Curve tab.

See also: Importing Data (page 206) and the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Curve Tab

Use: The Curve tab is used to list depths and a *single* column of measured data to be plotted as a point to point curve. Each Curve Column established in the log format requires a separate Curve tab.

If you wish to list *multiple* columns of data for each depth, see the Multi-Curve tab (page 169).

Corresponding log design component: Quantitative data declared with this command will be plotted on the log in the Curve Column (page 90) or Cross-Plot Curve column (page 100) with the same name.

How to...

Enter the Curve Data

Entering Your Data

1. To add a new Curve tab to the current data file, you have two choices:

Automatic: If there's already a Curve column or a Cross-Plot Curve column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Curve tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: Select the **Data / New Data Item / Curve** command to manually insert a Curve tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Curve or Cross-Plot Curve column in the log design to which this data page is to be linked. In this list the program will show the names of all of the applicable columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Curve tab labeled with the selected name.

2. Enter the data as described below. This example is extracted from the sample file "mudlog1.dat."

**Curve column identifier, to match
the column name in Log Design**

Drilling Rate	
Depth	Value
-16720.00	32.00
-16721.00	35.00
-16722.00	32.00
-16723.00	34.00
-16724.00	36.00
-16725.00	37.00

Total Gas	
Depth	Value
-16720.00	1.40
-16721.00	1.30
-16722.00	1.80
-16723.00	1.80
-16724.00	1.80
-16725.00	1.40

Name: The name displayed on the data tab is used to match the data to a particular curve column in the log design. This name is declared when you first create the data page (above) and can be edited by right-clicking in the body of the data tab, and choosing **Edit Entity Name**.

Depth: In this column you must list the depth or elevation at which the measurements were taken. If your data are entered as depths (as opposed to elevations), they can be entered as either positive or negative depths: just be sure to be consistent throughout the data file.

Shortcut: Right-click on any cell in the Curve tab and select **Fill Depth Column** to fill the column with regular depth increments.

Value: In this column you enter the quantitative values, measured at the indicated depths, to be represented on the log as a curve.

If there is no data for a depth, you may note this with a non-numeric entry (such as "ND") or you may leave the interval blank. If the curve is to be plotted as a line, the line will be broken where there is no data. If the curve is to be plotted as a filled curve, then the no-data entries will simply be ignored.

Shortcut: If you already have this quantitative data in a tabular format in another application, you can copy the data there and then paste it into the Curve tab using the **Edit / Paste** command.

See also: Importing Data (page 206) and the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Edit-Notes Tab

Use: The Edit-Notes tab is used to enter text to be displayed in an "Edit Notes" entity in the log header or footer. This is text that uses WYSIWYG wrapping, carriage returns, margins, border, fill, and alignment. Such Edit Notes might be used to enter detailed comments about the current well.

Corresponding log design component: Text listed in this tab will be plotted on the log within the Edit Notes item of the same name. (See page 62.)

Restrictions: Each Notes entry is limited to 2048 characters.

How to...

Enter the Notes

1. To add a new Notes tab to the current data file or a new Notes entry to an existing tab, you have two choices:

Automatic: If there's already a Note item in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Note entity in the current data file. The program will know how to name the item based on the log design information.

Manual: Select the **Data / New Data Item / Edit-Note** command to manually insert a new tab or a new entry into an existing tab. (Only one Notes tab is permitted.)

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Note item in the log design to which this entry is to be linked. In this list the program will show the names of all of the Note items in the current log design. Or, just type in a name for the item. Click **OK**.

2. Enter the information:

Name: The names displayed in this column are used to match the text items to a particular Edit Note entity in the log design. For example, the text on a row labeled "Driller's Notes" will be plotted in the Note block named "Driller's Notes" in the log's design. This name is declared when you first add the Note item (above) and can be edited by right-clicking in the body of the Notes tab and choosing **Edit Entity Name**.

Text: In this column, you enter the text to be plotted. Double-click in the cell to display a Description Editor where you can type in the text. LogPlot allows you to format your text with spaces and paragraphs. In the Description Editor window, simply add spaces or carriage returns (paragraph markers using the Enter key) to format your text.

You can use the <Tab> key to advance from cell to cell within the Text-Column tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Edit-Text Tab

Use: The Edit-Text tab is used to enter the text to be plotted in the changeable text fields in the log header and footer. This is typically used to note names, dates, locations, etc.

Corresponding log design component: Text declared in this tab will be plotted in the header or footer portion of the log within the Edit Text fields (page 56) of the same names.

Restrictions: There is a 120 character limit (including spaces) on text entries. The Edit Text entries will not wrap when displayed on the log. If you need to enter long text that will wrap, check out the new Edit Notes data item (previous topic).

How to...

Enter the Edit Text data

1. To add an Edit-Text tab to the current data file, or to add a new entry to an existing Edit-Text tab, you have two choices:

Automatic: If there's already an Edit-Text label in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert the new Edit-Text entity to the current data file. The program will know how to name the item based on the log design information.

Manual: Select the **Data / New Data Item / Edit-Text** command to manually insert a new tab or a new entry into an existing tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Edit-Text item in the log design to which this entry is to be linked. In this list the program will show the names of all of the Edit-Text items in the current log design. Or, just type in a name for the item.

Group Name: LogPlot allows you to organize your Edit-Text items in different groups, for easier data entry. The groups will be displayed as separate data tabs.

- Existing groups: Any existing group names will be displayed when you click the down arrow. Select the existing group where this new item is to be listed.
- Create a new group: Type in a new name in this field to create a new Edit-Text group.
- No group: If you don't want to display your Edit-Text entries on separate tabs, you can leave this field blank. In the log design, the Edit-Text item should be assigned to the group "Default".

Click **OK**.

The program will add to the data sheet an Edit-Text tab if none already exists. In the tab, the newest entry will be labeled with the selected name. If an Edit-Text tab already exists, the entry will be added to the existing tab.

2. Enter the data, as illustrated below. This example is from the sample file "Enviro-geotech5.dat."

Entity Name	Enter Text (up to 120 characters)
project	Bandolier Gas Station
location	3300 W. Rimrock Drive
job #	10-001-02
logger	Zachary Smith
manager	Bruce Stuart
dates drilled	6-02-93 to 6-03-93
Borehole No.	RFP-34B
Total Depth	30'
notes	One hot, dusty day !

Group Name → Project

Edit-Text item name, to match the field name in the log design

Text to plot in header or footer (Type in or double-click)

Entity Name: The names displayed in this column are used to match the text items to a particular Edit-Text entity in the log design. For example, the text on the row labeled "project" will be plotted in the Edit-Text item named "project" in the log's design. This name is declared when you first add the Edit-Text item (above) and can be edited using the **Edit / Edit Entity Name** command.

Text: In this column, you enter the text to be plotted. The text can be up to 120 characters, including spaces.

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row within the Edit-Text tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Fillbar Tab

Use: The Fillbar tab is used to enter depth intervals at which vertical pattern bars will be plotted on the log. These may represent sampling intervals, coring, or qualitative information ("poor show" or "trace").

Corresponding log design component: Data declared with this command will be plotted on the log in the Fillbar Column of the same name (page 118).

How to enter the Fillbar data

- To add a new Fillbar tab to the current data file, you have two choices:

Automatic: If there's already a Fillbar column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Fillbar tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: Select the **Data / New Data Item / Fillbar** command to manually insert a Fillbar tab.

Entering Your Data

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Fillbar column in the log design to which this data page is to correspond. In this list the program will show the names of all of the Fillbar columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Fillbar tab labeled with the selected name.

2. Enter the fillbar information, as shown below. This example is from the sample file "mudlog1.dat."

Fillbar column identifier, to match the column name in the log design

Top	Base	Fill
-16750	-16780	
-16820	-16840	

Depths at top and base of intervals for "Cores" column

Top	Base	Fill
-16752	-16768	good
-16768	-16780	fair
-16780	-16788	trace
-16820	-16826	good
-16826	-16838	fair
-16838	-16858	trace

Depths at top and base of intervals for "Shows" column. "Fill" keywords determine horizontal extent of the fill.

Name: The name displayed on the data tab is used to match the data to a particular Fillbar column in the log design. This name is declared when you first create the data page (above) and can be edited by right-clicking in the body of the data tab, and choosing the **Edit Entity Name** option from the pop-up menu.

Top, Base: In these columns you must list the depth or elevation at the top and the base of the interval that is to be filled with a pattern. You may list multiple intervals for a single column.

If your data are entered as depths (as opposed to elevations), they can be entered as either negative or positive values; just be sure to be consistent throughout the data.

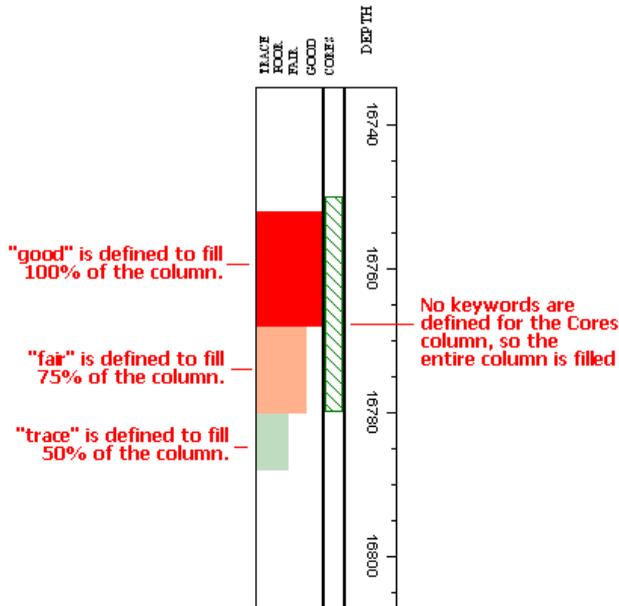
Fill: This optional data field can be used to customize the fill for the fillbar column.

If you leave this column blank, the fillbar interval will be filled with the default pattern defined for the Fillbar column in the log design.

If you enter a keyword here, the fillbar interval will be filled with the pattern that is associated with keyword. Like a Lithology data tab, this field links to the current Keyword Table. In this way, you can specify the pattern design, background and foreground colors, pattern density, and fill percent. Keywords may be comprised of one or more words, and are limited to 60 characters including spaces.

Shortcut: Rather than typing in the keyword name, just double-click on the Fill cell to bring up the Lithology Selector window. Here you can pick from the available

keywords in the current keyword file and view the pattern that is associated with them.



Examples: You could leave the Fill column blank for a Fillbar column displaying cored intervals in the borehole. All intervals would be displayed with the default pattern design. You could define custom keywords for some kind of measured intervals (good show versus poor show), varying the colors, patterns, and even percent fill of the column.

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row within the Fillbar tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Horizontal Line Tab

Use: The Horizontal Line tab is used to enter one or more depth levels at which a horizontal line is to be plotted across a portion of the log, or across the entire log, as set up in the log design. This is often used to create a solid line at the lowest depth in the log. If a second, unequal depth is specified in this tab, then the line will be plotted at an angle between the two depths.

! In the log design, you can request that the horizontal line be plotted at regular depth increments, in addition to the manually-declared depths done here. If you want the lines plotted at regular intervals only, you need not create a data tab.

Corresponding log design component: Horizontal line depths declared in this tab will be plotted on the log in the Horizontal Line column (page 125) of the same name.

How to enter the Horizontal Line data

Entering Your Data

1. To add a new Horizontal Line tab to the current data file, you have two choices:

Automatic: If there's already a Horizontal Line item in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Horizontal Line tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: Select the **Data / New Data Item / Horizontal Line** command to manually insert a Horizontal Line tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Horizontal Line item in the log design to which this data page is to correspond. In this list the program will show the names of all of the Horizontal Line entities in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Horizontal Line tab labeled with the selected name.

2. Enter the data.

Left Depth (default): Here you enter the depth at which the horizontal line or lines is/are to be plotted. If, for example, you wanted a single horizontal line plotted at the final depth of your log, you would type in that depth here. This example corresponds to the sample log shown above.

End of Log	
Left Depth (Default)	Right Depth
-30	

Depth(s) at which left edge of line(s) will be plotted.

Enter the right-depth only if the line is not to be horizontal.

Right Depth: Optional. If this column is left blank, the program will assume the line is to be plotted horizontally at the depth declared in the Left Depth column. If, however, you want the line plotted at an angle between two depths, you can enter the depth for the right side of the line here.

Note that the horizontal placement of the lines is determined by the placement of the Horizontal Line Column in the design screen.

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row in the tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Interbed Tab

Use: The Interbed tab is used to define interbed zones to plot as patterns within a Lithology Pattern column that has the same name. The interbeds are declared with keywords, just like the Lithology intervals. However, interbed text is not displayed.

Corresponding log design component: Interbed patterns will be plotted on the log in the Lithology Pattern column of the same name (page 78).

How to enter the Interbed data

1. To add a new Interbed tab to the current log design, select the **Data / New Data Item / Interbeds** command. (There is no automatic method of inserting Interbed tabs because they are linked to Lithology Pattern columns.)
2. **Entity Name:** In the displayed window, click on the down-arrow to the right, and select the name of the Lithology Pattern column to which this entry is to correspond. In this list the program will show the names of all of the Lithology Pattern columns in the current log design.

! This is important. Unless you link this Interbed data with a particular Pattern column, they won't plot. The Interbed tab and the Lithology Pattern column must have the same name.

If you don't have a design selected, or if your design's Pattern column names aren't displayed, click the **Cancel** button. Access the **Options** menu from the main program toolbar, select the **Log Settings** option, and select the log design to be used. Then try adding the Interbeds tab again.

The **Entity Name** prompt will also allow you to simply type in a name.

3. Click **OK**.

The program will add to the data sheet an Interbed tab labeled with the name you entered.

4. Enter the data, as described below.

Name: The name displayed on the data tab is used to match the data to a particular Lithology Pattern column in the log design. This name is declared when you first create the data page (above) and can be edited using the **Data / Edit Entity Name** command.

Top, Base: In these columns you must list the depth or elevation at the top and the base of the interbed interval being described on that row. If your data are entered as depths (as opposed to elevations), they can be entered as positive or as negative values; be sure to be consistent throughout the data.

Lithology: In this column you type in the "keyword" for the interval. Keywords may be comprised of one or more words, and are limited to 60 characters including spaces.

Shortcut: Rather than typing in the keyword name, just double-click on the keyword cell to bring up the Lithology Selector window. Here you can pick from the available keywords in the current keyword file and view the pattern that is associated with them.

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row within the tab.

See also: Importing Data (page 206), and the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Interval-Data Tab

Use: The Interval-Data tab is used to enter depth intervals and a *single* column of measured data to be plotted as Bar Graphs, as labels in a Bar Graph Value column, or as text in an Interval-Data column. Each Bar Graph, Bar Graph Value, or Interval Text column established in the log design requires a separate Interval-Data tab.

This tab replaces the “Histogram” tab in LogPlot2003 and earlier.

If you wish to list *multiple* columns of data for each depth, see the Multi-Interval-Data tab (page 171).

Corresponding log design component: Numeric data declared in this tab will be plotted on the log in the Bar Graph column (page 107) and/or the Bar Graph Value column (page 111) of the same name. Alphabetic or numeric data listed in this tab can be plotted as labels in the Interval Text column (page 130) with the same name.

How to enter the Interval data

1. To add a new Interval-Data tab to the current data file, you have two choices:

Automatic: If there's already a Bar Graph, Bar Graph Value, or Interval Data column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Interval-Data tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: Select the **Data / New Data Item / Interval-Data** command to manually insert an Interval Data tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Bar Graph, Bar Graph Value, or Interval Text column in the log design to which this data page is to be linked. In this list the program will show the names of all of the linkable columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet an Interval Data tab labeled with the selected name.

2. Enter the interval-based data. The example, shown below, is from the sample file mining3.dat.

Top	Base	Value
40	41	0.00
41	42	0.00
42	43	1.00
43	44	3.00
44	45	4.00
45	46	4.50
46	47	4.00
47	48	3.00
48	49	1.00

Interval data identifier, to match the Bar Graph, Bar Graph Value, or Interval Text column name in the log design

Depths at top & base of intervals

Measured values

Name: The name displayed on the data tab is used to match the data to a particular Bar Graph column, Bar Graph Value column, or Interval Text column in the log design. This name is declared when you first create the data page (above) and can be edited by right-clicking in the body of the data tab, and selecting **Edit Entity Name** from the pop-up menu.

Top, Base: In these columns you must list the depth or elevation at the top and the base of the interval at which the measurements were taken. If your data are entered as depths (as opposed to elevations), they can be entered as either positive or negative values; just be sure to be consistent throughout the data.

Shortcut: Right-click on any cell in the Interval-Data tab and select **Fill Interval Column** to fill the columns with regular depth increments.

Value: In this column you enter the numeric/alphabetic values, measured at the indicated depths, to be represented on the log as a bar graph or as labels.

If you are entering numeric data, and if there is no data for a depth interval, you can note this with a non-numeric entry (such as "ND") or you can leave the interval blank. That bar graph interval will just be omitted from the column.

Shortcut: If you already have this quantitative data in a tabular format in another application, you can copy the data there and then paste it into the Interval-Data tab using the **Edit / Paste** command.

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row in the tab.

See also: Importing Data (page 206), and the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Lithology Tab

Use: The Lithology tab is used to enter a set of lithologic descriptions for a Lithology Pattern column and/or Lithology Description column that have the same name. LogPlot compares the declared keyword to those listed in the keyword file. If a keyword match is made, the pattern declared for that keyword will be plotted in the Lithology Pattern column for that interval. Any short or extended description text can be plotted in the Lithology Description column.

Alternatives: If you wish to plot text that is not associated with lithologic information and has no keywords (such as comments, text measurements, etc.), then you should use either the Text-Column tab or the Interval Data tab. Text that is to be plotted vertically in the body of the log is entered using the Vertical-Text tab. If you want to plot interbedded pattern blocks, use the Interbed tab.

Corresponding log design component:

- * Keywords listed in the **Lithology** column of the Lithology tab are linked to graphic patterns. These patterns will be plotted in the Lithology Pattern column (page 78) of the same name, if any, in the log design. The keywords themselves can be plotted in the Lithology Description column (page 81), or they can be omitted, as declared in the Log Designer.
- * Descriptions entered in the **Description** column of the Lithology tab will be plotted within the Lithology Description column (page 81) of the same name, if any, in the log design. Descriptions may be short or extended, and are optional.

Restrictions: There is a limit of 60 characters, including spaces, for keywords. There is a limit of 2000 characters, including spaces, for extended descriptions.

How to enter the Lithology data

1. To add a new Lithology tab to the current data file, you have two choices:

Automatic: If there's already a Lithology Pattern or Lithology Description column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Lithology tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: Select the **Data / New Data Item / Lithology** command to manually insert a Lithology tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Lithology Pattern and/or Lithology Description columns in the log design to which this data page is to be linked. In this list the program will show the names of all of the pattern and description columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Lithology tab labeled with the selected name.

2. Enter the data, as described below.

Observed Lithology

Lithology Description Column and/or Lithology Pattern Column identifier, to match the name(s) in the log design

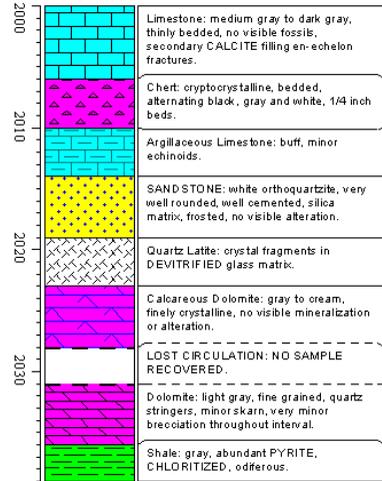
Top	Base	Lithology	Contact	Description (up to 2000 Characters)
-2000	-2006	Limestone		medium gray to dark gray, thinly bedded, no visible fossils
-2006	-2010	Chert		cryptocrystalline, bedded, alternating black, gray and white, 1/4 inch beds.
-2010	-2014	Argillaceous Limestone		buff, minor echinoids.
-2014	-2019	SANDSTONE		white orthoquartzite, very well rounded, well cemented, silica matrix, frosted, no visible alteration.
-2019	-2023	Quartz Latite		crystal fragments in DEVITRIFIED glass matrix.
-2023	-2028	Calcareous Dolomite		gray to cream, finely crystalline, no visible mineralization or alteration.
-2028	-2031	LOST CIRCULATION	---	NO SAMPLE RECOVERED.
-2031	-2036	Dolomite	---	light gray, fine grained, quartz stringers, minor skarn, very minor brecciation throughout interval.
-2036	-2039	Shale		gray, abundant PYRITE, CHLORITIZED, odiferous.

Depth at top & base of intervals

Keyword for intervals (type in or double-click)

Optional contact lines for top of interval

Optional description for intervals (type or double-click)



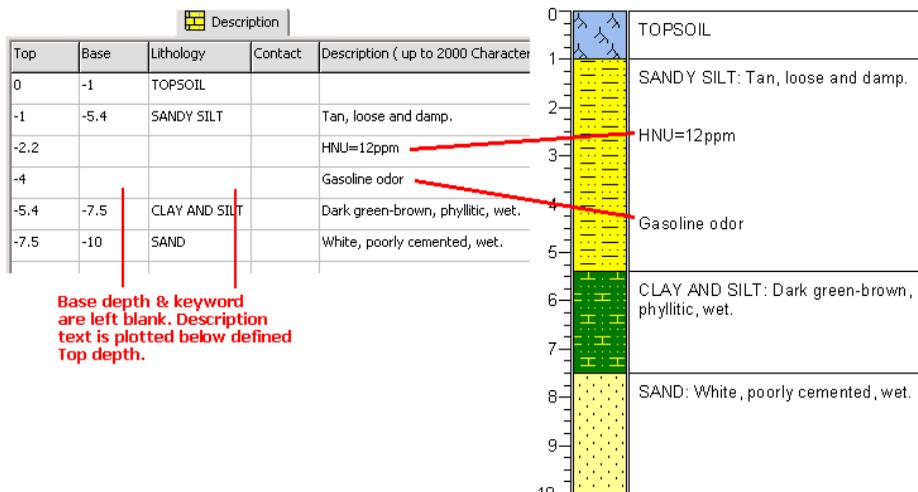
Name: The name displayed on the data tab is used to match the data to a particular Lithology Pattern and/or Lithology Description column in the log design. This name is declared when you first create the data page (above) and can be edited by right-clicking in the body of the data tab, and selecting **Edit Entity Name** from the pop-up menu.

Top, Base: In these columns you must list the depth or elevation at the top and the base of the lithologic interval being described on that row. If your data are entered as depths (as opposed to elevations), they can be either negative or positive values; be sure to be consistent throughout the data file.

Shortcut: Right-click on any data column in the Lithology tab and select **Fill Interval Column**.

New! Comments: If you leave the Base depth blank, you can plot comments within a larger description interval.

Entering Your Data



Lithology: In this column you type in the “keyword” for the interval. Keywords may be comprised of one or more words, and are limited to 60 characters including spaces.

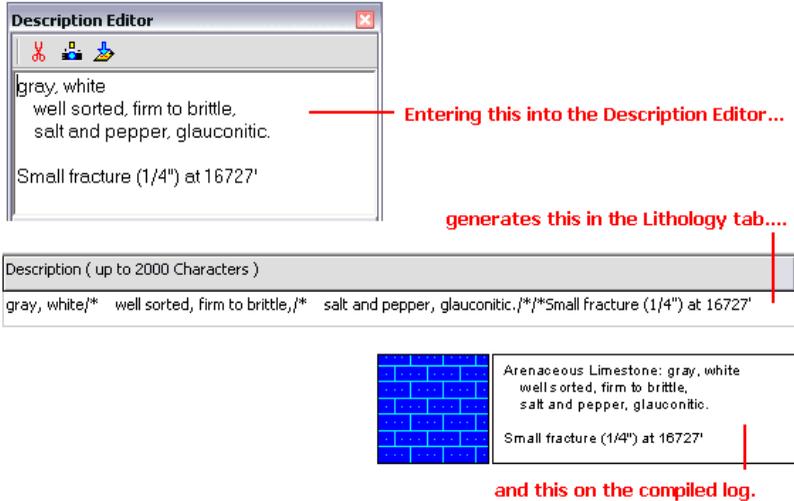
Shortcut: Rather than typing in the keyword name, just double-click on the keyword cell to bring up the Lithology Selector window. Here you can pick from the available keywords in the current keyword file and view the pattern that is associated with them.

Contact: Double-click in this column to specify a customized contact line for the top of the listed interval. This line will be plotted between pattern blocks and between description blocks if present and if description divider lines are enabled.

Description: In this column, you may type in any extended description that you wish to have plotted in the Description column of the log design. There is a limit to 2000 characters including spaces.

Shortcut: Rather than typing the extended description into the Lithology tab cell, you can double-click on the description cell to bring up the Description Editor window.

You can format your descriptive text with spaces and paragraphs. In the Description Editor window, simply add spaces or carriage returns (paragraph markers using the Enter key) to format your text. If you are typing the descriptions in the Lithology tab’s cell, use these characters (a forward slash followed by an asterisk) to note a hard carriage return: /*



Tip: If you need specific depth-placement of the non-contiguous text, you should use the Comments method, discussed above.

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row within the tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Multi-Curve Tab

Use: The Multi-Curve tab is used to list depths and two or more columns of measured data to be plotted as point to point curves in a Curve column or a Cross-Plot Curves column.

If you wish to list just a *single* column of data for each depth (e.g. just one curve), see the Curve tab (page 155).

Corresponding log design component: Quantitative data declared with this command will be plotted on the log in a Curve column (page 90) or Cross-Plot Curves column (page 100) of the same names. Extra curve data will be ignored.

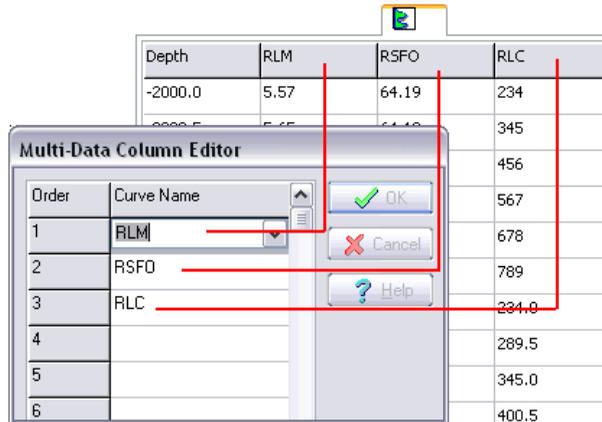
How to Enter the Multi-Curve data

1. To add a new Multi-Curve tab into the current data file, select the **Data / New Data Item / Multi-Curve** command. (There is no automatic means of inserting Multi-Curve tabs; the **Update Data Template from Log Design** tool creates single-Curve tabs for all Curve columns.)

The program will display a window in which you can define the names and order of the curves to be entered. Because this data page references multiple curve columns, each with its own name, the curve names are listed as the *column* headings in the tab rather than the *tab* heading.

Entering Your Data

- For each curve to be listed in this data tab, click on the down-arrow to the right, and select the name of the Curve column or Cross-Plot Curve column to which each is to correspond. In this list the program will show the names of all of the Curve columns and Cross-Plot Curve columns in the current log design.



- Click **OK** when the column names are selected.
- Enter the curve data, as shown in the example below.

Depth	RLM	RSFO	RLC
-2000.0	5.57	64.19	234
-2000.5	5.65	64.19	345
-2001.0	5.92	66.91	456
-2001.5	6.18	71.02	567
-2002.0	6.70	76.54	678
-2002.5	7.39	83.37	789
-2003.0	7.92	90.20	234.0
-2003.5	8.26	94.23	289.5
-2004.0	8.00	00.00	345.0
-2004.5	8.00	00.00	400.5

Curve column identifiers, to match column names in the log design

Depths

Measured Values

Depth: In this column you must list the depth or elevation at which the measurements were taken.

Shortcut: Right-click on any cell in the Multi-Curve tab and select **Fill Depth Column** to fill the column with regular depth increments.

If your data are entered as depths (as opposed to elevations), they can be entered as positive or negative values, but be sure to be consistent throughout the data.

Columns 2 - 41: These columns list the actual measurements at the listed depths. These measurements will be plotted as point-to-point curves.

The Column Names

The names displayed as column headers within the Multi-Curve data tab are used to match the data to particular curve columns in the log design. For example, data listed in a "RLM" column will be plotted in the Curve Column named "RLM" in the log's design, and the data in the "RSFO" column will be plotted in the "RSFO" Curve Column in the log's design. These names were entered when the tab was first created, above.

To change the names of the headers, or to add or remove headers, right-click on any cell in the Multi-Curve window, and select Edit Multi-Column Headers from the pop-up menu.

The Data Listing

To enter the actual curve data into the Multi-Curve data page cells, you can use the <Tab> key to advance from cell to cell, and from the end of one row to the beginning of the next as you type in the values.

If there is no data for a depth, you may note this with a non-numeric entry (such as "ND") or you may leave the interval blank. If the curve is to be plotted as a line, the line will be broken where there is no data. If the curve is to be plotted as a filled curve, then the no-data entries will simply be ignored.

Shortcut: If you already have this quantitative data in a tabular format in another application, you can copy the data there and then paste it into the Multi-Curve tab using the **Edit / Paste** command.

See also: Importing Data (page 206) and the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Multi-Interval-Data Tab

Use: The Multi-Interval-Data tab is used to list depth intervals and two or more columns of data to be plotted as Bar Graph Columns, as labels in Bar Graph Value columns, or as text in Interval Text columns. This data tab differs from the Multi-Curve tab in that data are entered over depth intervals, with a top and base depth, while curve data are entered with single depth points.

If you wish to list just a *single* column of data for each depth interval, see the Interval-Data tab (page 164).

This replaces the Multi-Histogram tab from older versions of LogPlot.

Corresponding log design component: Quantitative data listed in this tab will be plotted on the log as bar graphs in the Bar Graph columns (page 107). The data values themselves can be plotted as text labels in the Bar Graph Value columns (page 111). Alphanumeric data can be displayed in Interval Text columns (page 130).

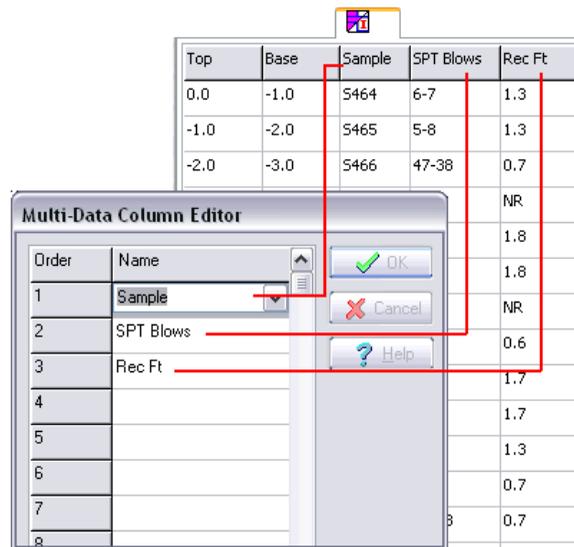
How to enter the Multi-Interval-Data

1. To add a new Multi-Interval-Data tab to the current data file, select the **Data / New Data Item / Multi-Interval-Data** command.

The program will display a window in which you can define the names and order of the data to be entered. Because this data page references multiple columns, each with its own name, the data names are listed as the *column* headings in the tab rather than the *tab* heading.

(There is no automatic means of inserting Multi-Interval-Data tabs; the **Update Data Template from Log Design** tool creates individual Interval-Data tabs for all Bar Graph, Bar Graph Label and Interval Text columns.)

2. For each type of data to be listed in this tab, click on the down-arrow to the right, and select the name of the Bar Graph, Bar Graph Value, or Interval Text column to which each is to correspond. In this list the program will show the names of all of the applicable columns in the current log design.



3. Click **OK** when the column names are selected.

The program will add to the data sheet a Multi-Interval-Data tab. Because this data page references multiple columns, each with its own name, the data names are listed as the *column* headings in the tab rather than the *tab* heading.

4. Enter the quantitative or text data. An example is shown below.

Data names, to match Bar Graph, Bar Graph Value, or Interval Text column names in the log design

Top	Base	Sample	SPT Blows	Rec Ft
0.0	-1.0	S464	6-7	1.3
-1.0	-2.0	S465	5-8	1.3
-2.0	-3.0	S466	47-38	0.7
-3.0	-4.0	S467	17-11	NR
-4.0	-5.0	S468	22-11	1.8
-5.0	-6.0	S469	9-5	1.8
-6.0	-7.0	S470	14-9	NR
-7.0	-8.0	S471	7-6	0.6
-8.0	-9.0	S472	6-6	1.7

Depths at top & base of intervals

Data to be represented as Bar Graphs, as text in Bar Graph Labels, or as text in Interval Data columns.

Top, Base: In these columns you must list the depth or elevation at the top and base of the intervals at which the measurements were taken.

Shortcut: Right-click on any cell in the Multi-Interval-Data tab and select **Fill Interval Column** to fill the columns with regular depth increments.

If your data are entered as depths (as opposed to elevations), they can be entered as either positive or negative values; just be sure to be consistent throughout the data.

Columns 3 - 42: These columns list the actual measurements, sample numbers, or other notes recorded at the listed depth intervals.

The Column Names

The names displayed as column headers within the Multi-Interval-Data tab are used to match the data to particular Bar Graph, Bar Graph Value, and Interval Text columns in the log design. For example, the data in the "Gold" column will be plotted in the Bar Graph column named "Gold" in the log's design, and the data in the "Core Count" column will be plotted in the "Core Count" Interval Text column in the log's design.

To change the names of the headers, or to add or remove headers, right-click on any cell in the Multi-Interval-Data window, and select the Edit Multi-Column Headers command.

The Data Listing

To enter the actual data into the data page cells, you can use the <Tab> key to advance from cell to cell, and from the end of one row to the beginning of the next.

If there is no data for a depth interval, you may note this with a non-numeric entry (such as "ND") or you may leave the interval blank. That bar graph interval or text label will just be omitted from the log.

Entering Your Data

Shortcut: If you already have this data in a tabular format in another application, you can copy the data there and then paste it into the Multi-Interval-Data tab using the **Edit / Paste** command.

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row in the tab.

See also: Importing Data (page 206) and the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Orientation Tab

Use: The Orientation tab is used to enter downhole survey information for non-vertical wells. This information can be reflected on a strip log scale bar that's linked to the Orientation data tab, or displayed in a Curve column showing true vertical depth.

! LogPlot logs are always plotted as vertical, but the true elevations for any well deviation can be reflected on the scale bar.

Corresponding log design component: Downhole survey information will be represented on the log in a scale bar (page 86) that's linked to this data tab. It can also be represented in a Curve column (page 90) set up to display true vertical depth.

Restrictions: There can be only one Orientation tab per file.

How to enter the Orientation data

1. To add an Orientation tab to the current data file, you have two choices:

Automatic: If there's already a Scale Bar or TVD Curve Column in the current log design that is set up to display true vertical depths or elevations, with a name defined, you can use the **Data / Update Data Template from Log Design** tool to insert an Orientation tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: You can also use the **Data / New Data Item / Orientation** command to manually insert a tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name that has been defined in the Scale Bar settings in the log design, or the TVD Curve Column, to which this data page is to be linked. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet an Orientation tab labeled with the selected name.

2. Enter the downhole survey data.

Depth: Enter here the depths at which the downhole survey measurements were taken. These must be entered as depths rather than elevations. You can enter either positive or negative depths but you must be consistent with the format of the other log data.

Bearing: Type in the bearing of the well at the listed depths. The bearings must be expressed in azimuth degrees (0 to 360, with 0 = north).

Inclination: Type in the inclination of the well at the listed depths. The inclination data follows either a

“**dip from horizontal**” convention in which 0 is a horizontal line, -90 points straight down, and +90 points straight up, or a

“**dip from vertical**” convention in which 0 is straight down and +90 is horizontal. (The data convention is established in the log design.)

This example illustrates dip from horizontal data format.

Downhole Survey		
Depth	Bearing	Inclination
-2000	270	-90
-2347	270	-85
-2561	263	-79
-2612	260	-75
-2774	248	-60
-2818	240	-45

Depth at which survey measurement was taken

Bearing of well, 0 to 360 degrees, 0 = north

Inclination angle of well. In this example 0 = horizontal and -90 = straight down ("dip from horizontal")

There is no limit to the number of survey points you can list for the well.

Survey data must be listed in order, from the start of the well to the end.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Percent Tab

Use: The Percent tab is used to specify the keywords for the rock types to be represented in a Pattern Percent column, and to list the depth / elevation intervals and the representative percentages of each rock type.

Corresponding log design component: Percentage data listed in the Percent tab will be plotted within the Pattern Percent column (page 105) of the same name, if any, in the log design.

Restrictions: You may specify up to 20 keywords per Percent tab.

How to enter the Percent data

1. To add a new Percent tab to the current data file, you have two choices:

Automatic: If there's already a Pattern Percent column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Percent tab in the current data file. The program will know how to name the tab based on the log design information

Entering Your Data

Manual: You can also use the **Data / New Data Item / Percent** command to manually insert a Percent tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Pattern Percent column in the log design to which this data page is to be linked. In this list the program will show the names of all of the Pattern Percent columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Percent tab labeled with the selected name.

2. Enter the percentage data. The example shown below, taken from the sample file "lithology3.dat," illustrates how data is entered into the tab.

 **Pattern % column identifier, to match column name in the log design.**

Top	Base	SANDSTONE	SHALE	LIMESTONE	DOLOMITE	LOST CIRCULATION
-16720	-16725	30	0	70	0	0
-16725	-16730	5	10	40	45	0
-16730	-16735	0	100	0	0	0
-16735	-16740	0	0	0	0	100
-16740	-16745	100	0	0	0	0
-16745	-16750	20	0	40	40	0
-16750	-16755	0	20	80	0	0
-16755	-16760	0	0	0	0	100
-16760	-16765	0	30	70	0	0
-16765	-16770	5	0	95	0	0
-16770	-16775	0	0	80	20	0

Keywords whose percentages are listed below

Depth at top & base of each interval

Relative percentage values for each declared keyword. The percentage values on each row must total 100 or less.

Name: The name displayed on the data tab is used to match the data to a particular Pattern Percent column in the log design. This name is declared when you first create the data page (above) and can be edited using the **Data / Edit Entity Name** command.

Top, Base: In these columns you must list the depth or elevation at the top and the base of the pattern percent interval being described on that row.

Shortcut: Right-click on any cell in the Percent tab and select **Fill Interval Column** to fill the columns with regular depth increments.

If your data are entered as depths (as opposed to elevations), they can be entered as either positive or negative values; just be sure to be consistent throughout the data.

Columns 3-22: These columns represent the rock types for which you will be declaring percentage representation. The rock type keywords are displayed as column headers.

The Column Names

To change the names of the headers, or to add or remove headers, right-click on any cell in the Percent window, and select the **Edit Percentage Headers** command.

The program will display the Pattern Percentage Editor window. In this window is listed the keywords that are to be displayed in the Percent data tab. The top-down order in the listing corresponds to the left-right order of the column headings. See page 200.

The Data Listing

To enter the actual percentage data into the Percent data page cells, you can use the <Tab> key to advance from cell to cell, and from the end of one row to the beginning of the next.

The relative percentage values on each row must add up to a value less than or equal to 100.

Shortcut: If you already have this percentage data in a tabular format in another application, you can copy the data there and then paste it into the Percentage tab using the **Edit / Paste** command.

See also: Importing Data (page 206) and the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Scale Table Tab

Use: *New!* The Scale Table tab is used to enter one or more depth ranges and a new minimum and maximum value range for a curve column. As LogPlot compiles the data, it will plot the curve using the default horizontal scaling, but will change the scale as declared for the Scale Table depth interval(s). For example, if a Curve column is set up to plot the curve from 0 to 20, you can use a Scale Table to define a top and base depth within which the curve will be plotted from 0 to 100 instead.

Corresponding log design component: Data entered in this tab will affect the plotting of data in the Curve column (page 90) of the same name.

How to enter the Scale Table data

1. To add a new Scale Table tab to the current data file, you have two choices:

Automatic: If there already are Curve columns in the current log design which are set to link to a Scale Table, you can use the **Data / Update Data Template from Log Design** tool to insert new Scale Table tab(s) in the current data file. The program will know how to name the tab(s) based on the curve name(s) in the log design.

Manual: You can also use the **Data / New Data Item / Scale Table** command to manually insert a Scale Table tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Curve column in the log design to which this data page is to be linked. In this list the program will show the names of all of the Curve columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Scale Table tab labeled with the selected name.

2. Set up the tab and enter the data, as shown in the example below.

Entering Your Data

 CALIPER
 Scale Table identifier, to match name of Curve column in the log design

Top	Base	Minimum Value	Maximum Value
425	465	5	8
635	750	5	8

Top and base depths for listed scale change

New minimum & maximum value for curve column, for listed depth range

Name: The name displayed on the data tab is used to match the data to a particular Curve column in the log design. This name is declared when you first create the data page (above) and can be edited using the **Data / Edit Entity Name** command.

Top, Base: In these columns you must list the depth at the top and the base of the interval where the curve scale is to be changed. Any data outside these depth ranges will be scaled as defined as default in the log design.

Minimum Value and Maximum Value: Here you can enter the range of data values to be represented in the curve column for the defined depth interval.

Notes:

- If you've set up your Curve column to be linked to a Scale Table, and if there's either no Scale Table tab in the data file or the Scale Table tab is blank, the curve will be plotted using the default settings in the log design. This is handy because it offers the option of custom scaling should you wish to use it, but it will plot as default should you choose not to.
- If your Curve column is set up for display of automatic value labels within the column itself, they will be updated automatically for this scale change.

You may use the <Tab> key to advance from cell to cell, and from the end of a row to the next row within the tab.

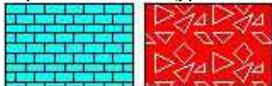
See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Symbol Tab

Use: The Symbol tab is used to enter depths and symbol numbers for plotting graphic symbols in a Symbol column in the body of the log.

Note that we use the term "symbol" to mean a single graphic item, such as this: 

In contrast, we use the term "pattern" to mean a repeating graphic block, usually used to represent rock type, such as these:



If you wish to insert symbols in the *header or footer* of the log, that is done within the Log Designer, using the Header/Footer Symbol tool.

Corresponding log design component: Data listed in this tab will be plotted on the log in the Symbol column (page 116) of the same name.

How to enter the Symbol Column data

1. To add a new Symbol tab to the current data file, you have two choices:

Automatic: If there's already a Symbol column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Symbol tab in the current data file. The program will know how to name the tab based on the log design information.

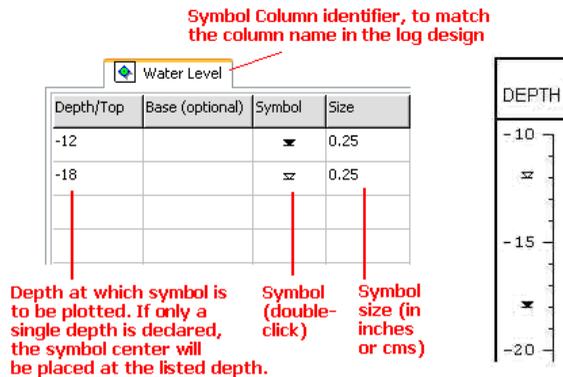
Manual: You can also use the **Data / New Data Item / Symbol** command to manually insert a Symbol tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Symbol column in the log design to which this data page is to be linked. In this list the program will show the names of all of the Symbol columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Symbol tab labeled with the selected name.

2. Enter the symbol data, as shown in the examples below.

Single Depth:



Depth Interval:

Entering Your Data

Symbol Column identifier, to match the column name in the log design

Depth/Top	Base (optional)	Symbol	Size
0	-2	█	.25
-2.5	-4.3	█	.25
-4.9	-6.8	█	.25
-7.3	-9.4	█	.25

Type

Depth interval over which the symbol is to be stretched. If both top and base depths are entered, the symbol will be stretched to fill the depth interval.

Symbol (double-click)

Symbol size (in inches or cms)

1	█	45
2	█	40
3	█	65
4	█	80

Name: The name displayed on the data tab is used to match the data to a particular Symbol column in the log design. This name is declared when you first create the data page (above) and can be edited using the **Data / Edit Entity Name** command.

Depth: You can list either a **single depth** where the symbol will be placed, or a **depth interval** within which the symbol will be stretched.

Depth/Top: In this column, list the single depth or elevation at which you want the symbol to be plotted (the symbol's origin - usually its center - will be placed at the declared depth). Or, if the symbol is to be stretched, list the depth at which the symbol's top will be placed.

Base (optional): This column is used only if the symbol is to be stretched within an interval. Here you type the base depth for the symbol.

Your depths can be entered as either positive or negative values; just be sure to be consistent throughout the data.

Symbol: Double-click on the **Symbol** cell to bring up the Symbol Selector window. Here you can pick from the available symbols in the current symbol file, and select the symbol color. You can choose either vector or bitmap symbols. See *Creating and Editing Symbols* (page 257) for more information.

Size: In this column, you must type in the size at which the symbol is to be plotted, expressed in decimal inches. An entry of ".0.25" would plot the symbol at a size of one-quarter inch (or cm.), regardless of the vertical scaling of the log. If you've declared both a top and base depth, this size will affect the horizontal dimension only.

You may use the <Tab> key to advance from cell to cell, and from the end of a row to the next row within the Symbol tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Tadpoles Tab

Use: The Tadpoles tab is used to list depths and dip direction and dip angle for downhole structural (dipmeter) measurements. Optional fields include color and value. This information can be displayed in a Tadpole column in the log design.

Corresponding log design component: This structural information will be plotted on the log in the Tadpole column (page 128) of the same name.

How to enter the Downhole Structural Data

- To add a new Tadpoles tab to the current data file, you have two choices:

Automatic: If there's already a Tadpoles column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Tadpoles tab in the current data file. The program will know how to name the tab based on the log design information

Manual: Select the **Data / New Data Item / Tadpoles** command to manually insert a Tadpoles tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Tadpoles column in the log design to which this data page is to be linked. In this list the program will show the names of all of the applicable columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Tadpoles tab labeled with the selected name.

- Enter the data as described below. This example is extracted from the sample file "Geophysical3.dat."

Depth	Azimuth	Dip	Color	Value
0	245	30		4.1
-5	235	32		3.8
-10	224	35		4.0
-15	233	39		4.3
-20	225	42		4.1
-25	237	44		4.3
-30	213	30		3.9
-35	225	23		3.8
-40	210	25		3.9
-45	212	23		3.8
-50	213	24		4.2

Labels below the table:

- Depth
- Dip direction (0-360 azimuth deg)
- Dip Angle (0-90)
- Color (optional)
- Other value (optional)

Entering Your Data

Name: The name displayed on the data tab is used to match the data to a particular Tadpoles column in the log design. This name is declared when you first create the data page (above) and can be edited by right-clicking in the body of the data tab, and choosing **Edit Entity Name**.

Depth: In this column you must list the depths or elevations at which the measurements were taken. If your data are entered as depths (as opposed to elevations), they can be entered as either positive or negative depths; just be sure to be consistent throughout the data file.

Shortcut: Right-click on any cell in the Tadpoles tab and select **Fill Depth Column** to fill the column with regular depth increments.

Azimuth: In this column you enter the dip direction in 0 to 360 azimuth degrees. The bearings will be represented by the tadpole tails which will be oriented straight up for north-bearing dips and straight down for south-bearing dips.

Dip: In this column, enter the dip angles, where 0 = horizontal and 90 = vertical. Dip angle is represented by the placement of the tadpole symbol within the column: zero-degree (horizontal) dip angles are represented with symbols plotted along the left edge of the column, and 90 degree (vertical) dip angles are shown by symbols along the right edge of the column.

Color: (Optional) Double-click in this cell to select a color for the measurement's tadpole symbol. If you choose to define specific colors for individual samples, be sure to set the Tadpole column to a "Column-Based" color scheme.

Value: (Optional) This column is used to enter quantitative values for the measurements, for use in scaling the tadpole symbols. In the Tadpole column options you can specify that symbol size either is fixed (and these values are ignored) or is based on the numbers in this value column, with a minimum and maximum size defined for the value range.

See also: Importing Data (page 206) and the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Text-Column Tab

Use: The Text-Column tab is used to enter text and the depth at which it is to be plotted in a Text column on the log. Such text could range from sample numbers to measurements of moisture content or consistency to extended textual listings or notes. These text entries will simply be plotted as-is, with no keyword searching or linking to a pattern column as is done with text listed in a Lithology tab. For text columns with more formatting, refer to the Interval Text Column and Interval Data tab.

Corresponding log design component: Text listed in this tab will be plotted on the log within the Text column (page 112) of the same name.

Restrictions: Each Text-Column entry is limited to 2048 characters. You must list the entries in sequential order down the log.

How to enter the Text Column data

1. To add a new Text Column tab to the current data file, you have two choices:

Automatic: If there's already a Text column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool

to insert a new Text tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: You can also use the **Data / New Data Item / Text-Column** command to manually insert a Text-Column tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Text column in the log design to which this data page is to be linked. In this list the program will show the names of all of the Text columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Text tab labeled with the selected name.

2. Enter the text information, as shown in the examples below.

USCS	
Depth	Text
0.0	CL
-2	SM
-7	OL
-17.0	SC
-22.0	CL

Sample Number	
Depth	Text
-4	1-1
-6	1-2
-8	1-3
-12	1-4
-15	1-5
-20	1-6

Name: The name displayed on the data tab is used to match the data to a particular Text Column in the log design. This name is declared when you first create the data page (above) and can be edited using the **Data / Edit Entity Name** command.

Depth: In this column you must list the depth or elevation at which you want the text to be plotted. Placement of Text-Column text is done similarly to descriptive text.

! The declared depth will represent the top of a "box" that the program creates for the text entry.

If your data are entered as depths (as opposed to elevations), they can be entered as either positive or negative values; just be sure to be consistent throughout the data.

Text: In this column, you enter the text to be plotted. The text can be short abbreviations (as in the above examples) or lengthy descriptions, up to 2048 characters. The program will wrap the text automatically within the Text Column. The program will honor "hard" carriage returns (noting them with "/" characters) and leading spaces.

Shortcut: Rather than typing in the text description, you can double-click on the text cell to bring up the Description Editor window.

Entering Your Data

You can use the <Tab> key to advance from cell to cell, and from the end of a row to the next row in the tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Vertical-Text Tab

Use: The Vertical-Text tab is used to enter text and the depth intervals between which it is to be plotted in a Vertical Text column on the log. This is often done in logs to note stratigraphic groupings or geologic time divisions.

"Regular" (horizontal) text is entered using the Text-Column tab, or with the Interval Data tab (for Interval Text Columns)

Corresponding log design component: Text listed in this tab will be plotted on the log within the Vertical Text column (page 115) of the same name.

How to enter the Vertical Text data

1. To add a new Vertical Text tab to the current data file, you have two choices:

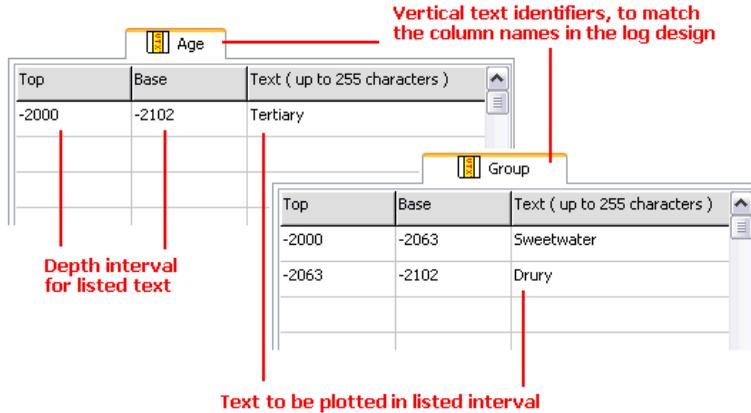
Automatic: If there's already a Vertical Text column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Vertical Text tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: You can also use the **Data / New Data Item / Vertical Text** command to manually insert a Vertical Text tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Vertical Text column in the log design to which this data page is to be linked. In this list the program will show the names of all of the Vertical Text columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Vertical Text tab labeled with the selected name.

2. Enter the text information. This example illustrates how you enter data into the tab.



Name: The name displayed on the data tab is used to match the data to a particular Vertical Text column in the log design. This name is declared when you first create the data page (above) and can be edited using the **Data / Edit Entity Name** command.

Top, Base: In these columns you must list the depth or elevation at the top and the base of the interval in which you want the text to be plotted. If your data are entered as depths (as opposed to elevations), they can be entered as either positive or negative values; just be sure to be consistent throughout the data.

Text: In this column, you enter the text to be plotted vertically within the indicated interval. The text can be short abbreviations (as in the above examples) or relatively lengthy, however if there is not enough room vertically to display the text, it will be truncated when the log is compiled. Items that affect the interval length in addition to the depth range are font size (established in the Log Designer), and vertical plotting scale.

You may use the <Tab> key to advance from cell to cell within the Vertical-Text tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Well-Column Tab

Use: The Well-Column tab is used to enter depth intervals and well material "keywords" for display as a Well Construction diagram on a log. In addition, the user declares the inner and outer diameter for the materials for correct representation of width. The construction "keywords" are associated with graphic patterns just like lithologic keywords, and are easily selected from the data tab. In addition you can specify an "offset" from well center, enabling you to display two separate borings in a single Well Construction diagram.

New to LogPlot 7 is the ability to define text captions that are plotted as an integral part of the well construction diagram.

Corresponding log design component: Intervals and materials listed in this tab will be plotted on the log within the Well Column (page 121) of the same name.

Restrictions: There is a limit of 60 characters, including spaces, for keywords.

How to enter the Well Construction data

- To add a new Well Column tab to the current data file, you have two choices:

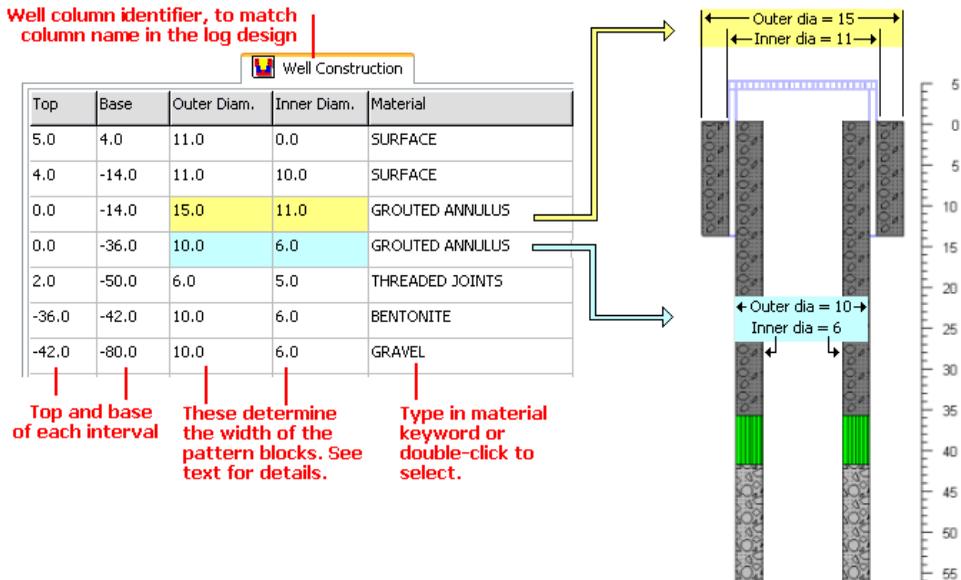
Automatic: If there's already a Well Construction column in the current log design to which you'll be linking the data, you can use the **Data / Update Data Template from Log Design** tool to insert a new Well Column tab in the current data file. The program will know how to name the tab based on the log design information.

Manual: You can also use the **Data / New Data Item / Well-Column** command to manually insert a Well Column tab.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the Well Construction column in the log design to which this data page is to be linked. In this list the program will show the names of all of the Well Construction columns in the current log design. Or, just type in a name for the tab. Click **OK**.

The program will add to the data sheet a Well Column tab labeled with the selected name.

- Enter the depth, diameter, keyword, and offset information. This example illustrates how you enter data into the tab.



Name: The name displayed on the data tab is used to match the data to a particular Well Column in the log design. This name is declared when you first create the data page (above) and can be edited using the **Data / Edit Entity Name** command.

Top, Base: In these columns you must list the depth or elevation at the top and base of the interval to be filled with pattern; they determine the vertical extent of the pattern

blocks in the Well Column. Depths can be entered as either positive or negative values; just be sure to be consistent throughout the data.

Outer Diam.: The value entered in this column determines the outer width of the pattern blocks in the Well Column. The Well Column is set up in the Log Designer to represent a particular well diameter, in real world coordinates such as inches or centimeters. The Outer Diameter setting established here determines how much of the width of the entire Well Column will be filled with that pattern block.

Example: Let's say you created a Well Column in Log Designer and established its diameter at 15 inches. If you then declared a pattern interval in the Well Column data tab to have an **Outer Diameter** of "15," the pattern block would be plotted all the way to the edge of the column. You may refer to the widest block in the above diagram.

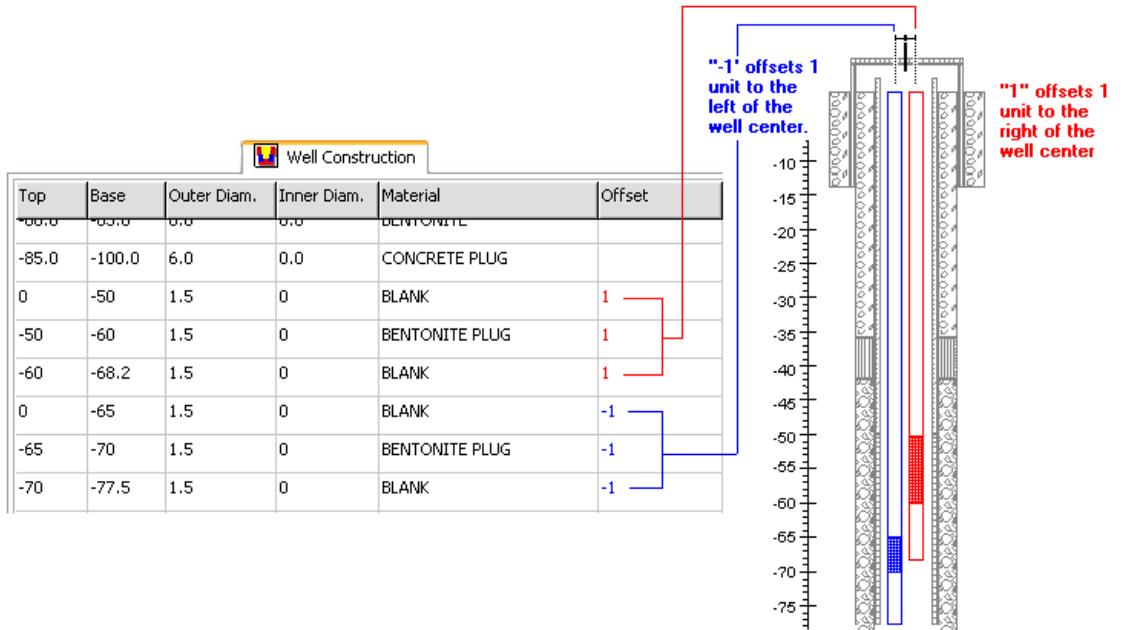
Inner Diam.: The value entered in this column determines how far to the center of the Well Column that the interval will be filled with the pattern block. In the widest interval shown above, for the gray gravelly-looking pattern, the block is plotted to an inside diameter of "11."

Material: In this column you type in the "keyword" for the well construction interval. These construction keywords are listed in the same keyword library as the lithology keywords and are associated with particular patterns. Keywords may be comprised of one or more words, and are limited to 60 characters including spaces.

Shortcut: Rather than typing in the keyword name, just double-click on the **Material** cell to bring up the Lithology Selector window. Here you can pick from the available keywords in the current keyword file and view the pattern that is associated with them. See the Lithology Selector Window (page 194) for information.

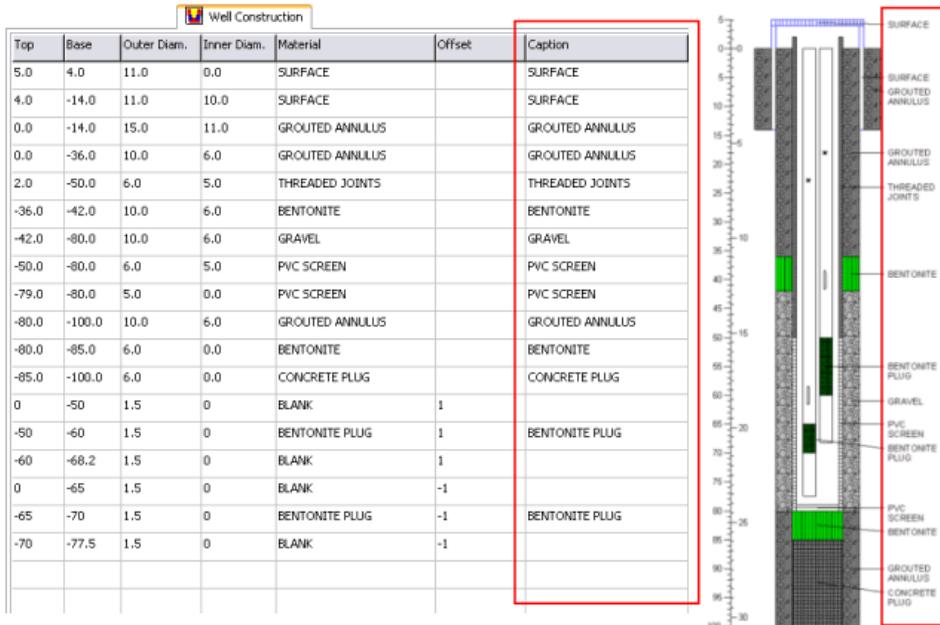
Offset: (Optional). This setting is used to declare the offset from the center of the well that this material block is to be plotted, enabling multiple borings within a single construction diagram. Negative values offset the block to the left of the center, positive values to the right. In the example below, the items noted in red are plotted to the right, and the items noted in blue to the left.

Entering Your Data



If no offset is declared, the program assumes the item to be centered in the well.

Caption: (Optional). **NEW** This column is used to define any captions to be plotted to the right of the construction diagram. The well column can be set up in the log design to be comprised of part diagram and part labels, with settings for the label font size/color and lines/arrows.



You may use the <Tab> key to advance from cell to cell within the Well-Column tab.

See also the program Help messages (**Help / Contents / Entering Your Data**) for more information.

Depth versus Elevation

Your log data that you enter in the LogPlot program will typically be entered as depths down the drill hole. The depths can be entered as either positive values (depth at top of log = 0, depth at base of log = 500) or as negative values (depth at top of log = 0, depth at base of log = -500).

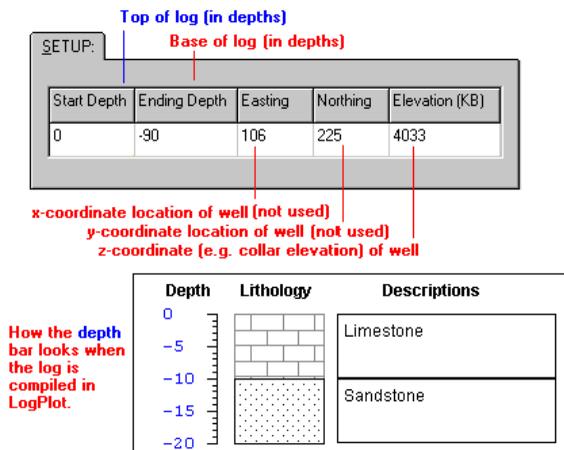
You may also enter the data as elevations. Your log might start at an elevation of 2500 feet elevation and extend down 500 feet to an elevation of 2000 feet.

LogPlot will accept both types of data, but you need to follow these guidelines to get the correct values to be plotted on the scale bar.

Depth Data, Depth Scale

If your LogPlot data are in depths and you select a depth Scale Bar, the uppermost depth label will be equal to the top of the log, listed in the LogPlot data file on the Setup tab. An excerpt from a data file is shown below, with the top of the log listed at a depth of 0.

Entering Your Data

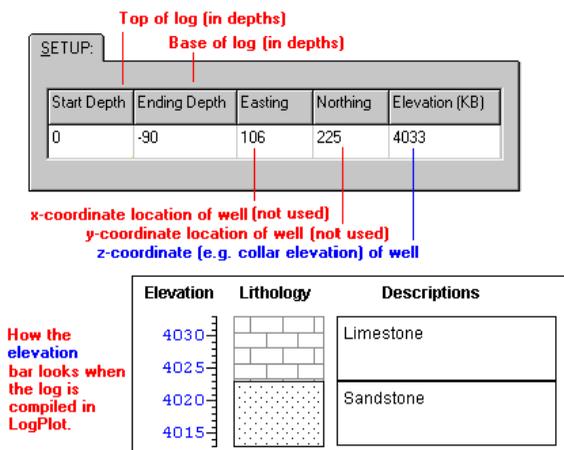


You may also plot a subset of the entire data set. In this example, you could request within LogPlot a plot of only the -20 to -80 portion of the log, and the depth bar would be labeled accordingly.

See also the **Absolute Value** check-box in the Scale Bar Setup if you prefer the depth labels be stripped of their "-" sign.

Depth Data, Elevation Scale

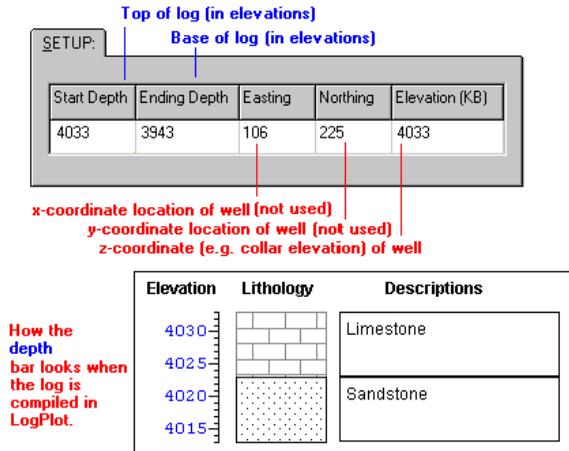
If your LogPlot data are in *depths* and you select an *elevation* Scale bar, the uppermost tick mark will be equal to the z-coordinate of the well, also listed in the data file in the Setup tab. An excerpt is shown below, with the top of the well listed at an elevation of 4033.



If you are plotting just a subset of the data, the elevation labels will be adjusted accordingly.

Elevation Data, Elevation Scale

If your LogPlot data are in elevations, this sets up a different scenario. To get them to plot as elevations, you should set your Scale Bar to *Depths*, and be sure the "Positive Depths" checkbox in the Compile window is not activated.



Automatic Data File Tools

LogPlot contains these very handy tools for automatic linking of your data and design files, and for trouble-shooting linking problems:

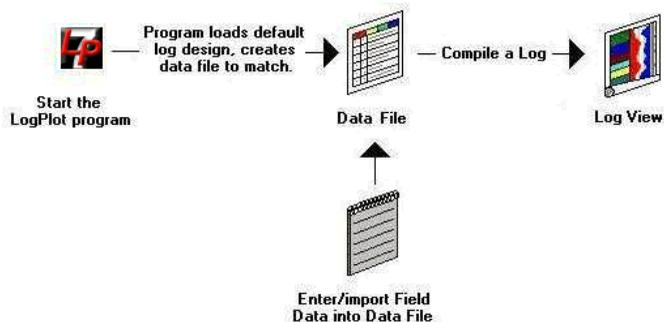
- Automatic Data Template: Each time you start up the LogPlot program, it will display a Data Editor window complete with all the applicable tabs for the current log design.
- Create New Data Template is available in the Log Designer window's **Data** menu. Use this tool to create a brand-new data file, with blank data tabs that match the items in the current log design.
- Update Data Template from Log Design is available in the Data Editor's **Data** menu. It is used to update an existing data file for the items contained in the current log design.
- Check Data Against Log Design is used to compare the tabs listed in the current data file with the entities in the current log design and display a quick summary.

LogPlot's Automatic Data Template

When the LogPlot program is launched, it remembers the name of the log design that was used during the last session of the program, and it loads that log design as default in the Log Designer window. The program can also initialize the new, untitled data windows (always created upon program startup) to match that design - complete with all necessary data tabs.

Entering Your Data

Example: Your company drills a new borehole and you want to display the data in the log design typically used for all such projects. You simply start up the LogPlot program, it automatically loads the design you last used, and initializes a new, blank data window with all the necessary tabs to match the design. You then enter the field data, and compile the data into a plottable log. Here's a diagram of this workflow:



How to...

Create an Automatic Data Template

1. Start the LogPlot program.

The program will load the default log design. It will populate a new, untitled data window with data tabs to match the entities in the log design.

2. Enter/import your data. (See Data Tab Summary, page 148, for details.)
3. Save the data file.

Turn off Automatic Data Templates

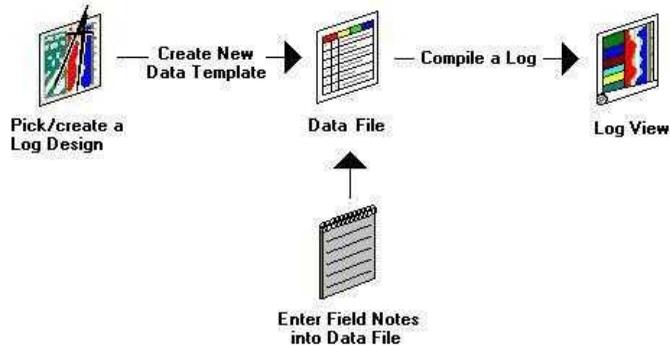
1. Choose the Options / System Settings menu item.
2. Remove the check-mark from the Data Auto-Template option.

The next time the program starts, it will initialize the new, blank data file with only the "Setup" data tab.

Creating a New Data File for a Log Design

The Log Designer's **Data / Create New Data Template** command is used to open a new Data Editor window and populate it with the data tabs that match the items in the current log design.

Example: Your company drills a new borehole and you want to display the data in the log design typically used for all such projects. You use LogPlot to open the log design, and you use **Create New Data Template** to create a new data file with tabs for this design. You then enter the field data, and compile the data into a plottable log. Here's a diagram of this workflow:



How to Create a new data file for the current log design

1. If necessary, click on the Log Designer tab and open the log design you wish to use.
2. Choose the **Data / Create New Data Template** command from the Log Designer's **Data** menu.

The program will populate this new data file with one or more tabs that correspond in type and name to the entities in the current log design.

3. Enter the data into the data tabs. (See Data Tab Summary, page 148, for details.)
4. Save the data file.

Check Data Against Log Design

LogPlot's Data Editor uses data "tabs" to organize the different kinds of information that can be plotted on the graphic log. The program matches these tabs - their types and their names - to items in your log's design to know what data items to plot where on the log.

If you have a log design for which you wish to enter new data, you can easily create a blank template of data tabs for that design using Log Designer's Create New Data Template command. If you have an existing data file, you can use the Data Editor's Update Data Template from Log Design command to update the data for new design items.

But, what if you still get blank spaces on your log when you compile your data? Use the Data Editor's **Data / Check Data Against Log Design** command.

The program will scan the current log design and data files, and compare the entities in both. It will open a text window and display a summary of its findings, similar to the example below. Note that the items are listed by their names (displayed on the data tabs and assigned to items in the design).

```

=====
Entities in Data but not in LogDesign
=====
Drilling Rate
  
```

Entering Your Data

```
=====
Entities in LogDesign but not in Data
=====
Cross-Plot Curve
```

Updating Your Data File for a Log Design

The Data Editor's **Data / Update Data Template from Log Design** option is used to update an existing data file so that it will contain all of the necessary data tabs for the current log design.

Example: Your company likes the logs you have already been generating with the program, and they want you to add 2 new items to the log's design. You add them to the design, use **Update Data Template from Log Design** to update the existing data file, complete the new data items, and compile the data into a log design. Here's a diagram of this workflow:



How to Update an existing data file for the current log design

1. If necessary, click on the Log Designer tab and open the log design you wish to use.
2. Click on an existing Data Editor tab or (if none are showing) create a new Data Editor window.
3. Open the existing data file you wish to update.
4. Choose the **Data / Update Data Template from Log Design** command from the Data Editor's menu.

The program will check the contents of the current data file against the entities in the current log design. For any design entities which have no corresponding data tabs, it will create these tabs in the Data Editor window.

5. Enter the data into the new data tabs. (See Data Tab Summary, page 148) for details.)
6. Save the data file.

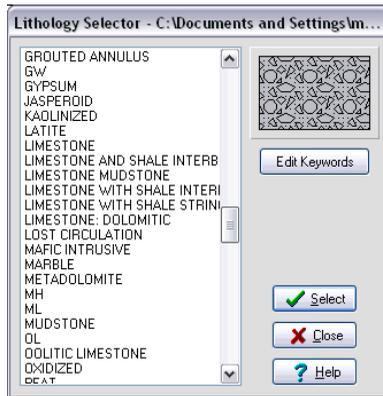
Other Data Tools

The Lithology Selector Window

Lithologic "keywords" are used in LogPlot to make a match between rock types and the graphic patterns used in logs to represent them. Keywords are entered in both Lithology and Percent data tabs to represent rock types, and in the Well-Column tab to represent construction materials.

When you double-click in the **Keyword** column in the Lithology tab or the **Materials** column in the Well-Column tab, or click on the **Add Keywords** button in the Pattern Percentage Editor window, the program will display the Lithology Selector window.

The Lithology Selector window displays the list of keywords in the current keyword file.



The Lithology Selector window displays the list of keywords in the current keyword file.

How to...

Select a keyword

Follow these steps to select a keyword from the Lithology Selector window.

1. To select a keyword, click on its name. Use the scroll bar as necessary to move up or down the listing. The pattern that is associated with the currently selected keyword is displayed in the upper-right corner of the window.
2. To accept your selection, click on the **Select** button. If you wish to close this window, you can click the Close button. Or, you can leave it open and drag it out of the way if you have more keywords to enter.
3. If you are working in a Lithology tab, you will be returned to the tab to enter the description information. If you are working in a Well-Column tab, you will be returned to the tab to enter any offset or caption. If you are working in a Fillbar tab, you will be returned to the tab to enter the next interval.

If you are working in a Percent tab, you may make additional keyword selections by highlighting a keyword and choosing **Select**. Once you have selected all of the desired keywords, you can return to the Pattern Percentage Editor window by clicking the **Close** button.

Open a different keyword table

Follow these steps to open a different keyword table:

1. Click on the **Edit Keywords** button in the Lithology Selector window.

The program will display the Keyword Editor.

2. Click on the **File** button at the bottom of the Keyword Editor window.

Entering Your Data

3. Choose the **Open** option. (See ! below.)
 4. From the displayed dialog box, select the name of the keyword file that you wish to display in the Editor, accessing other drives or folders as necessary. Note that keyword files have the file name extension KEY.
 5. Click the Open button to accept the selected keyword file name.
- The program will load the information in the selected keyword file into the Editor.
6. Click the OK button to return to the Lithology Selector window.
 7. Choose the keyword for that interval.

! Notes

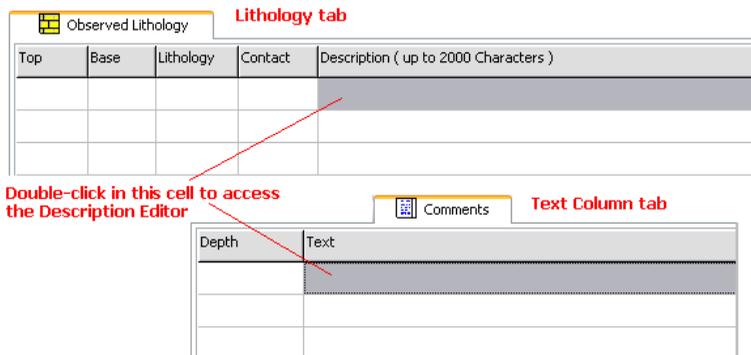
- This now is the active keyword file, and its name will be displayed in the title bar at the top of the Keyword Editor window. The program will use this keyword file during compiling of logs, and this file will now be listed as default under **Options / Program Files**.
- The keyword file structure in LogPlot 7, LogPlot2005, LogPlot2003, and LogPlot2001 is ASCII (text) in format rather than binary in format. If you wish to open a keyword file created in LogPlot98, LogPlot97, or LogPlot v.1, you must use the **Import** option rather than the Open option.
- If you wish to open a list of keywords from RockWorks, you must use the Import option.

See also: Creating and Editing Keywords (page 251) for information about adding, deleting, and changing keywords; changing patterns associated with keywords; and importing keywords from other sources.

The Description Editor

The Description Editor window is accessible from two LogPlot data tabs:

From the Lithology tab, the Description Editor is accessed by double-clicking in the Description column. It is used to type in the extended description, if any, that will be plotted in the Lithology Description column in the log's design.



From the Text-Column tab, the Description Editor is brought up when you double-click in the Text column. It is used to type in the text to be plotted in the Text Column.

To enter the text, you may type in from the keyboard, or use the following buttons:



Cut – Use this button to remove any highlighted text from the Editor window and place it in the computer's Clipboard for later pasting.

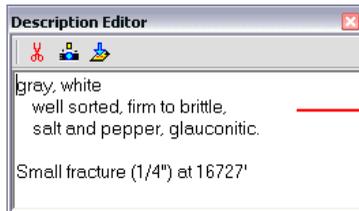


Copy – Use this button to place a copy of any highlighted text in the Editor window, and place it in the computer's Clipboard for later pasting.



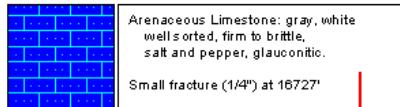
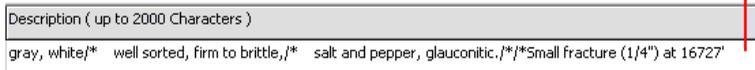
Paste – Use this button to insert at the current cursor location in the Editor window the contents of the computer's Clipboard. Only text may be pasted into this window.

You can format your descriptive text with spaces and paragraphs. In the Description Editor window, simply add spaces or carriage returns (paragraph markers using the Enter key) to format your text. If you are typing the descriptions in the Lithology tab's cell, use these characters (a forward slash followed by an asterisk) to note a hard carriage return: /*



Entering this into the Description Editor...

generates this in the Lithology tab....



and this on the compiled log.

Cut-Copy-Paste

These three commands are available as right-click options from within any of LogPlot's data tabs. They are also available as commands within the **Edit** menu, and with the keyboard shortcuts shown. These commands are used as follows:

Cut (Ctrl+X): This removes any highlighted information from the active data tab and stores it in your computer's Clipboard memory for later pasting.

Copy (Ctrl+C): This places a *copy* of any highlighted information in the active data tab and places it in your computer's Clipboard memory for later pasting.

Entering Your Data

Paste (Ctrl+V): This places into the active data tab any text information in the Clipboard. The information will be inserted starting in the highlighted cell and will extend downward in the tab. Note that any existing information will be overwritten.

Select All (Ctrl+A): This selects all of the data within the current tab. Once highlighted, you can use the Cut or Copy commands.

Fill Depth Column

The **Fill Depth Column** command is available as a right-click option from within many of the LogPlot data tabs. It is used to populate automatically a single column of depth values at regular increments into a tab's **Depth** column, starting at the current cursor position in the tab.

To add depth values to a tab, follow these steps:

1. Click in the tab to be edited, to make it active.
2. Click in the row in which the depth listing is to start.
3. Then, right-click in any of the tab's cells.
4. Select the **Fill Depth Column** command from the pop-up menu.
5. Enter the requested information.

Starting Value: Enter at this prompt the depth to be listed in the row at which the cursor is currently located. This value may represent English or metric units.

Ending Value: Enter at this prompt the lower-most depth value to be listed on the data tab.

Depth Increments: Enter here the increments at which the depths are to be listed in the tab.

Decimals: Type in, or select with the up- or down-arrows, the number of decimal places to be represented in the depths. Be sure the decimal places are adequate to represent the requested increments.

Starting Value :

Ending Value :

Interval :

Decimals :

Depth
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0

Notes

- In LogPlot, depths can be entered as either positive or negative values; this tool will comply with the current depth setting established under Log Settings.
- Any depth data already listed in the cells will be overwritten.

Fill Interval Column

The **Fill Interval Column** command is available as a right-click option from within many of the LogPlot data tabs. It is used to populate automatically beginning and ending depth values at regular increments into two columns, starting at the current cursor position in the tab.

To add depth intervals to a tab, follow these steps:

1. Click in the tab to be edited, to make it active.
2. Click in the row at which the depth listing is to start.
3. Right-click in any of the tab's cells.
4. Select the **Fill Interval Column** command from the pop-up menu.
5. Enter the requested information.

Starting Value: Enter at this prompt the depth to be listed in the row in which the cursor is currently located. This value may represent English or metric units.

Ending Value: Enter at this prompt the lower-most depth to be listed on the data tab.

Depth Increments: Enter here the increments at which the depths are to be listed in the tab. This will determine the **Top** and **Base** entries for each depth interval.

Decimals: Type in, or select with the up- or down-arrows, the number of decimal places to be represented in the depths. Be sure the decimal places are adequate to represent the requested increments.

Starting Value :

Ending Value :

Interval :

Decimals : 

Top	Base
0.0	5.0
5.0	10.0
10.0	15.0
15.0	20.0
20.0	25.0
25.0	30.0
30.0	35.0
35.0	40.0
40.0	45.0
45.0	50.0

Notes

- In LogPlot, depths can be entered as either positive or negative values; this tool will comply with the current depth setting established under Log Settings.
- Any depth data already listed in the cells will be overwritten.

Edit Entity Name

The **Edit Entity Name** command is available as a right-click option from within many of the LogPlot data tabs. This command can also be selected from the LogPlot **Data** menu.

It is used to change the name of the data item, displayed on the tab or as a row heading. The entity name is used to match the data item to an item in the log's design. For example, the data in a Curve tab with the name "drilling rate" will be plotted in a Curve column also named "drilling rate" in the log's design. Or, the Edit-Text row labeled "date" will be matched to the Edit-Text field named "date" in the header of the log.

How to...

Edit the entity name

To change the name displayed on a data tab, follow these steps:

1. Click on the tab to be modified, to make it active.
2. Right-click in any of the tab's cells.
3. Select the **Edit Entity Name** command from the pop-up menu.
4. Enter the requested information.

Entity Name: In the displayed window, click on the down-arrow to the right, and select the name of the item in the current log design to which this data page is to correspond. In this list the program will show the names of all of the entities in the current log design that match the tab type.

If you don't have a design selected, or if your design's correct column names aren't displayed, click the **Cancel** button. Access the **Options** menu from the main program toolbar, select the **Log Settings** option, and select the log design to be used. Then try changing the entity name again.

The **Entity Name** prompt will also allow you to type in a name. This must match, character-for-character, the name that is assigned to the corresponding item in the log design. The match is *not* case-sensitive.

5. Click **OK** to continue.

The program will display the new name at the top of the data tab. For the Edit-Text tab, the entity names are listed as the first entry of each row.

See also: Automatic Data File Tools (page 191)

Edit Percentage Headers

The **Edit Percentage Headers** command is available as a right-click option from within the Percent tab. It is used to change the name and/or number of lithology keywords to be represented in the tab. (A Percent tab is used to enter depth intervals and relative percentages of up to 20 rock types, to be displayed as graphic patterns in a Percent Column.

How to..**Edit the percentage headers**

To add/change the lithology keywords listed in the Percent tab, follow these steps:

1. Click on the Percent data tab to be modified, to make it active.
2. Right-click in any cell within the tab.
3. Select the **Edit Percentage Headers** command from the pop-up menu.

The program will display the Pattern Percentage Editor window. In this window is listed the keywords currently declared for the Percent tab.

4. Here, you may add, delete or reposition the keywords.

To add a keyword to the listing displayed in the Pattern Percentage Editor window, click on the **Add Keyword** button. You can then select one or more new keyword(s) from the Lithology Selector window. You may declare up to 20 keywords in Pattern Percentage Editor window. See the discussion of the Lithology Selector window earlier in this section.

To delete a keyword that is currently listed in the Pattern Percentage Editor window, click on the keyword and press the **Delete** button. The keyword will be removed from the display.

To move a keyword up or down in the listing, click on the keyword, drag it to its new location, and release the mouse button.

5. When you are done declaring all of the keywords to be displayed, in order, in the Percent tab, click on the **OK** button at the bottom of the Pattern Percentage Editor window.

You will be returned to the Percent tab, with the requested keywords displayed as column headers.

Edit Multi-Column Headers

The **Edit Multi-Column Headers** command is available as a right-click option from within the Multi-Curve and Multi-Interval-Data tabs. This command is used to change the entity name(s) to which the Curve, Bar Graph, Bar Graph Value, or Interval Text data listings will be matched. The names are displayed as column headers in the Multi-Curve and Multi-Interval-Data tabs.

How to...**Edit the multi-column headers**

To modify any of the column headers of a Multi-Curve or Multi-Interval-Data tab, follow these steps:

1. Click in the tab to be modified, to make it active.
2. Right-click anywhere within the tab.
3. Select the **Edit Multi-Column Headers** option.

The program will display a window listing the current names for the curve or bar graph columns in the tab.

4. To change a column name, click on the down-arrow to the right, and select the name of the item to which this data listing corresponds. In this list the program will show the

Entering Your Data

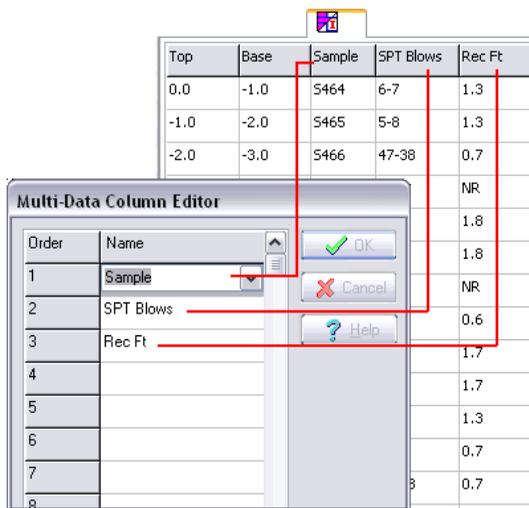
names of all of the Curve, Cross-Plot Curves, Bar Graph, Bar Graph Value, and Interval Text in the current log design.

If you don't have a design selected, or if your design's correct column names aren't displayed, click the **Cancel** button. Access the **Options** menu from the main program toolbar, select the **Log Settings** option, and select the log design to be used. Then try changing the column header again.

The Edit Multi-Column Headers prompt will also allow you to type in a name. This must match, character-for-character, the name that is assigned to the corresponding item in the log design. The match is *not* case-sensitive.

You may list up to 40 columns in the Multi-Curve and Multi-Interval-Data columns, respectively. Each listed column must have a unique name in order to match the data to an item in the log's design. Any extra data columns in the tab, without matching items in the log's design, will simply be ignored when the data is compiled.

The example below shows a Multi-Interval-Data tab, and how its column names appear when displayed in the Multi-Data Column Editor window.



Deleting Edit-Text Entries

The **Delete Edit Text** command is available as a right-click option from within an Edit-Text tab. It is used to remove the currently-selected Edit Text entity from the tab.

! It's advisable to use this option rather than the simple **Rows / Delete** command because the Edit Text row contains an entity name.

How to...

Delete an Edit Text item

1. Click in the Edit-Text tab in the data file, containing the item to be removed.

2. Click in the row of the item to be removed.
3. Right-click in that cell.
4. Select the **Delete Edit-Text** command from the displayed menu. (You can also choose the **Delete Edit-Text** command from the **Data** menu.)

! The program will NOT warn you before deleting. Be careful.

! If you inadvertently deleted the item, you can use the Data / Update Data Template from Log Design command to re-insert the item automatically.

Deleting Notes Entries

The **Delete Note** command is available as a right-click option from within an Notes tab. It is used to remove the currently-selected note entity from the tab.

! It's advisable to use this option rather than the simple **Rows / Delete** command because the Note row contains an entity name.

How to...

Delete a Note item

1. Click in the N-TEXT tab in the data file, containing the item to be removed.
2. Click in the row of the note you wish to delete.
3. Right-click in that cell.
4. Select the **Delete Note** command from the displayed menu. (You can also choose the **Delete Note** command from the **Data** menu.)

! The program will NOT warn you before deleting. Be careful.

! If you inadvertently deleted the item, you can use the Data / Update Data Template from Log Design command to re-insert the item automatically.

Inserting, Appending, Deleting Rows

When you right-click on a LogPlot data tab, a pop-up menu will appear. The following **Rows** tools are available:

Rows / Append is used to add rows *to the end* of the active data tab.

Rows / Insert is used to add rows *within the data listing* in the active data tab.

Rows / Delete command is available as a right-click option from within all of the LogPlot data tabs. This command is used to delete rows in the active data tab.

Rows / Go to command is available as a right-click option from within all of the LogPlot data tabs. This command is used to advance the cursor to a particular row in the active data tab.

See also: Deleting Data Items (page 145) for information about deleting *entire data tabs*. See the program help messages (**Help / Contents** / Entering Your Data / Entering the Data / Other Data Tools) for more information.

Manipulating Columns of Values

When you right-click on a LogPlot data tab, a pop-up menu will appear. The following **Columns** tools are available:

Entering Your Data

Columns / Math is used to perform arithmetic operations with the values in one of the data columns in the active data tab. LogPlot offers operations either with a constant or with the data listed in another column in the tab.

Columns / Resample is available for data tabs containing point-sampled (curve) quantitative data. It is used to transform data which was sampled at randomly or densely spaced depth intervals, to evenly spaced depth intervals for plotting. This is a handy way to delete extraneous data that can be the result of stream digitizing or overly-sensitive sampling equipment.

! This tool will resample all of the columns in the active tab.

Columns / Smooth is also available for data tabs containing quantitative data. This command is used to "smooth" out data values by averaging them with a user-specified number of neighboring data values.

Columns / Filter is also available for data tabs containing quantitative data, and is used to remove low and/or high out data values, re-assigning them a threshold minimum or maximum. This can be helpful if you are importing data sets with very high or low "null" values, or if you suspect recording error.

Columns / Statistics computes a quick summary of the population, range, sum, and average of the column's data values.

See the program help messages (**Help / Contents / Entering Your Data / Entering the Data / Other Data Tools**) for more information.

Moving Data Tabs

LogPlot displays its data tabs in the order in which the data blocks are listed internally in the DAT file, starting with the SETUP tab. Typically, the tabs are listed in the order in which they are added to the data file. If you created the DAT file automatically from the log design, the tabs will be listed in the same order as the entities are listed in the log design.

You may, however, prefer that the tabs be listed in a specific order to comply with field collection techniques or to fit your personal preferences. Use the **Move** options available when you right-click in the body of the tab. Or, simply click and drag the tab to a new location.

! The **Move** options are not available for the Setup tab; it is always listed first.

How to...

Move a data tab left or right (menu command)

1. Click in data tab you wish to move.
2. Right-click in any of the cells within the tab.
3. Select the **Move Left** command from the displayed menu to move the tab on position to the left. Select the **Move Right** option to move the tab one space to the right.

The tab will be repositioned as requested. Be sure to save the file to keep the changes.

Move a data tab (click and drag)

1. Click on the data tab you wish to move.

- Hold the mouse button down on the tab as you drag it to another position within the tab sequence. As you drag, you'll see a small rectangle, representing the tab name and icon, that moves with the cursor.
- Release the mouse button when the tab is positioned where you want it.

Notes:

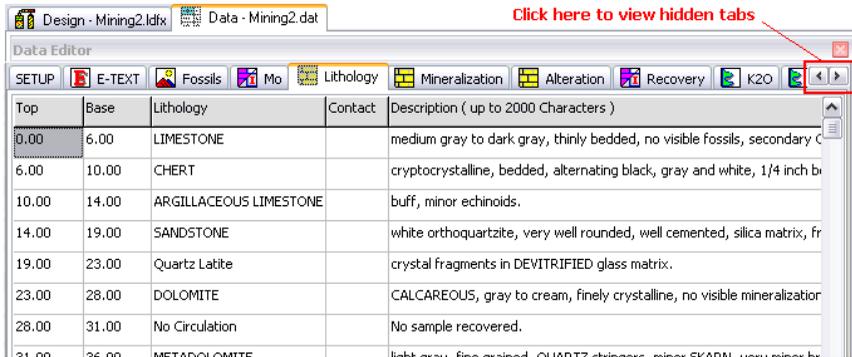
- The **Options / System Settings / Allow data tabs to be dragged** option must be activated (checked) in order for the tabs to be draggable.
- Once you get the tab sequence as you want it, you might want to *de-activate* the **Allow data tabs to be dragged** option, so that they don't get re-arranged by accident.

Wrapped versus Scrolling Tabs

By default, LogPlot displays all of the data tabs in a wrapped manner, so that multiple rows of tabs can be visible.

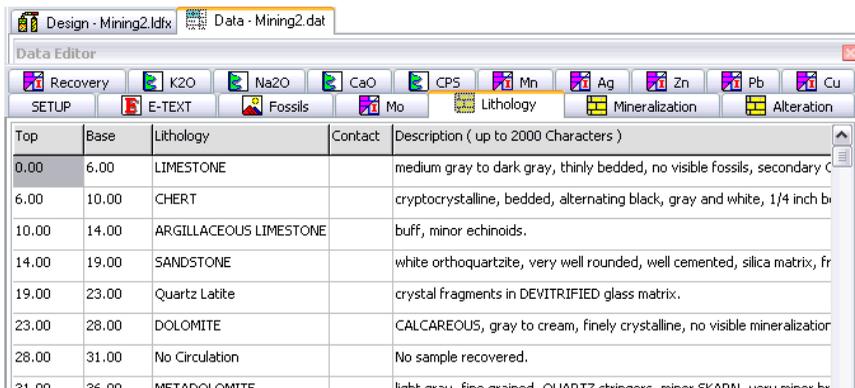
You can toggle this to a scrolling display of the tabs using the **Options / Scrolling Tabs** option.

Scrolling Tabs On: In the first example shown below, there is only one row of visible data tabs, with some tabs hidden from view. The program allows you to scroll to the left and right to view hidden tabs, using the arrow buttons along the right edge of the window.



Scrolling Tabs Off: In this example, there are no scrolling arrows; all tabs are visible because they wrap within the available space.

Entering Your Data



The screenshot shows the 'Data Editor' window with a table of lithology data. The table has columns for 'Top', 'Base', 'Lithology', 'Contact', and 'Description (up to 2000 Characters)'. The data is as follows:

Top	Base	Lithology	Contact	Description (up to 2000 Characters)
0.00	6.00	LIMESTONE		medium gray to dark gray, thinly bedded, no visible fossils, secondary C
6.00	10.00	CHERT		cryptocrystalline, bedded, alternating black, gray and white, 1/4 inch b
10.00	14.00	ARGILLACEOUS LIMESTONE		buff, minor echinoids.
14.00	19.00	SANDSTONE		white orthoquartzite, very well rounded, well cemented, silica matrix, fr
19.00	23.00	Quartz Latite		crystal fragments in DEVITRIFIED glass matrix.
23.00	28.00	DOLOMITE		CALCAREOUS, gray to cream, finely crystalline, no visible mineralization
28.00	31.00	No Circulation		No sample recovered.
31.00	36.00	METADOLOMITE		light gray, fine grained, QUARTZ thinners, minor SPARN, very minor by

How to...

Turn on/off scrolling tabs

1. Click in the Data Editor window whose settings you wish to change.
2. Click on the **Options** menu and choose **Scrolling Tabs**.

This is a toggle item: If it's displayed with a check-mark, then scrolling is activated. If it is not displayed with a check-mark, then the tabs will wrap. Changing the status from checked to not, or from not-checked to checked is done simply by selecting the item from the menu.

Importing Data into LogPlot

If you have log data stored in another software program, LogPlot offers several data import tools for bringing data into a single data sheet or importing entire files.

Importing Text Data

The Data Editor's ASCII Text import tool reads text files into a single data tab of your choice. For example, a RockWorks99 "LIT" file listing could be imported into a LogPlot Lithology tab. Or, a file containing rows and columns of quantitative values could be imported into a Multi-Curve tab.

How to...

Import the text data

1. Click on the tab into which you wish to import the text data. (You can insert a new data tab if necessary.)
2. Select the Data Editor's **File** menu, and choose the **Import** command.
3. From the pop-up menu, select the **ASCII Text** command.
4. Enter the requested information:

File to import: Click on the open-file button to the right of the prompt to select the name of the ASCII text file whose contents are to be imported.

The program will display the first 10 lines of this file in the scrolling window. You can verify that this is the text data you wish to import.

Skip lines: Enter here the number of initial lines that are to be omitted from the import; choose 0 if none is to be ignored.

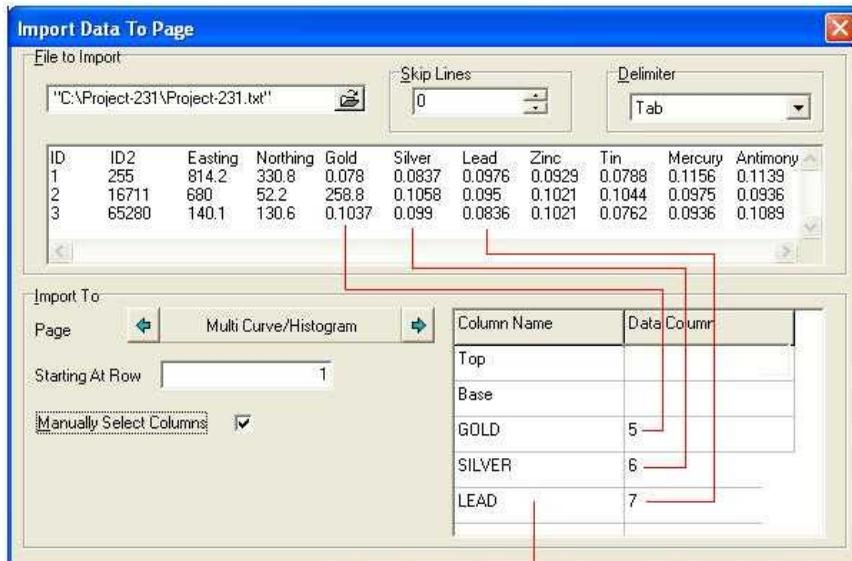
Delimiter: Specify here the column delimiter used in the imported file.

Import to: This determines the data tab into which the data is to be imported. The default will be the current (front-most) tab, but you may click on the arrows to advance through the list of tabs. The selected tab will be brought to the foreground of the Editor. The tabs will be listed by their names, except for Multi-Curve and Multi-Interval-Data tabs (which have multiple names). If necessary you can move the import window to the side as you scroll through the tab names to see which tab is on top.

Starting at Row: Enter the row number in the specified data tab at which the imported data listing should start. Note that the imported data will always start in the first column, though you can manually select the import column order.

Manually Select Columns: Insert a check here if you wish to specify a particular tab column for each column in the text file. (Leave this setting cleared if the text file's columns of data can imported as-is, same column order, and same number of columns.)

If manual selection is activated, you'll need to match up the number of the data column in the text file with the column names in the current data tab, as shown below.



These data tab columns will be assigned these text file columns.

! LogPlot data tabs require that the first one or two columns list point depths or top-bottom depth intervals. If the imported text file isn't listed with depths, you can leave the depth column(s) blank (as in the example above), and then enter the depths manually or automatically using the Fill Depth Column or Fill Interval Column tools.

Entering Your Data

! In the above example, the **Skip Lines** setting is left at "0" at first, in order to see this particular file's header lines for assigning columns. Then, prior to clicking **OK**, the **Skip Lines** setting is changed to "1" so that the header listing is not imported.

4. Click **OK** to proceed with the import.

The program will read the data in the selected text file, skipping the indicated number of header lines, and will list the remaining data in the selected tab.

Importing DBF Data

The Data Editor's DBF import tool reads files into a single tab of your choice. You may control the DBF fields are assigned to each tab column.

How to...

Import DBF data

1. Click on the tab into which you wish to import the DBF data. (You can insert a new data tab if necessary.)
2. Select the Data Editor's **File** menu, and choose the **Import** command.
3. From the pop-up menu, select the **DBF** command.
4. Enter the requested information into this first import screen:

DBF Database Name: Click on the open-file button to the right of the prompt to select the name of the DBF file whose contents are to be imported. This file must have a "DBF" extension.

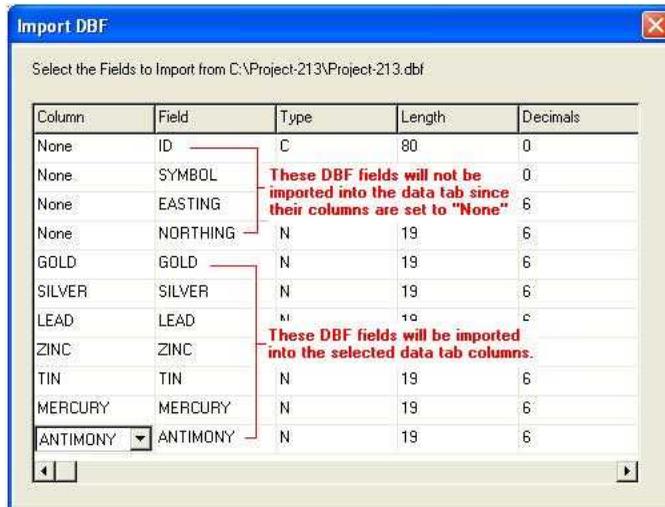
Import to: This determines the data tab into which the data is to be imported. The default will be the current (front-most) tab, but you may click on the arrows to advance through the list of tabs. The selected tab will be brought to the foreground of the Editor. The tabs will be listed by their names, except for Multi-Curve and Multi-Interval-Data tabs (which have multiple names). If necessary you can move the import window to the side as you scroll through the tab names to see which tab is on top.

Starting at Row: Enter the row number in the specified data tab at which the imported data listing should start. Note that the imported data will always start in the first column, though you can manually select the import column order.

5. Click **Next** to advance to the next screen, where you can assign specific DBF fields to specific columns in the selected data tab.

The first column of items, labeled **Columns**, corresponds to the columns in the active data tab. The second column of values, labeled **Fields**, corresponds to the fields in the DBF file. Also listed to the right will be each DBF field's type (C for character, N for numeric), length, and number of decimal places.

6. Starting with the first DBF field in the first row, click on the first cell to select from the pop-up list the data tab column in which this field's data is to be listed. If you wish to skip the first DBF field, set the Column to **None**. (You may need to scroll up in the pop-up list to locate "None".)
7. Continue with the second DBF field: Click in the first cell of the second row to select the data column in which this field's data is to be listed. Again, if you don't want this information imported into the tab, select None.
8. Continue in this manner for all of the DBF fields, as shown below.



9. Click **Finish** to proceed with the import.

The program will extract the selected fields in the DBF file and list them in the requested columns in the data tab.

! LogPlot data tabs require that the first one or two columns list point depths or top-bottom depth intervals. If the imported DBF file isn't listed with depths, you can leave the depth column(s) blank, and then enter the depths manually or automatically using the Fill Depth Column or Fill Interval Column tools.

Importing LAS Data

The Data Editor's LAS import tool reads LAS (Log ASCII Standard) files, version 1.2 - 2 for import into a Multi-Curve data tab. You can select the curves in the LAS file to be imported, and you can request that the header information be imported into Edit-Text fields using the standard Mnemonic names as the entity names. This tool now also offers automatic creation of a very basic log design for the LAS file.

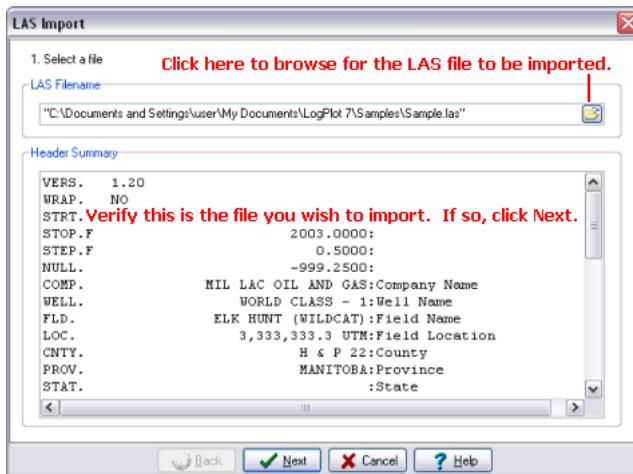
This process requires several steps which are listed below. Please refer to the Help messages for more detailed instructions (**Help / Contents / Entering Your Data / Importing Data**).

Step 1: Select the LAS file to import

1. Create a new Data Editor window.
2. Select the **Import** command from the Data Editor's **File** menu.
3. From the pop-up menu, select the **LAS** option.

The first import window is used to specify the name of the file to be imported:

Entering Your Data



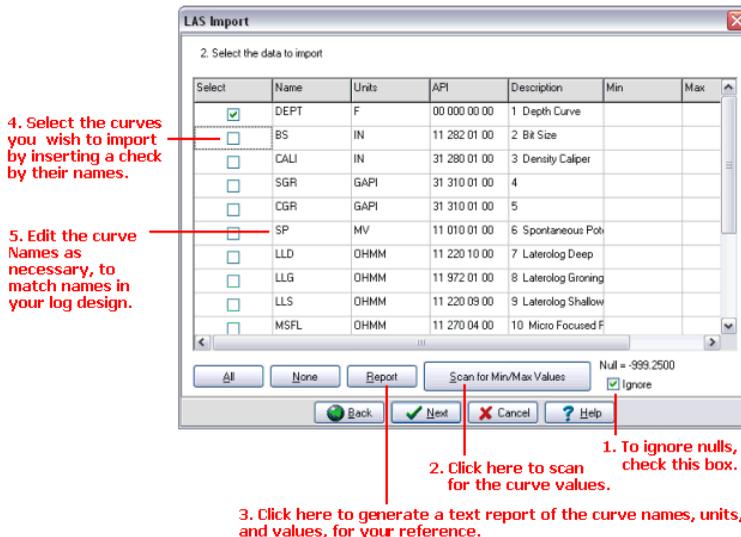
4. **LAS Filename:** Browse for the LAS file to be imported, and click **OK** in the file open window to select it.

The program will scan the LAS file, and will list the header information in the reference window in the import dialog box.

5. Click on the **Next** button.

Step 2: Select the curves to import

On the next screen is listed all of the curves in the LAS file, referenced with the name, the curve units, the API number, and description.



1. First, check whether LogPlot has encountered a “null” value in the data file. This will be displayed in the lower-right corner of the screen. The null value is used in the LAS file to note no-data entries. If the null value is numeric (such as “-999.25”) then you’ll want to exclude them from the data summary. Insert a check in the Ignore check-box to be sure the null value is not included in the next step.
2. Click the **Scan for Min/Max Values** to view a summary of the elog ranges (excluding any null value).

The program will display these values in the “Min” and “Max” columns in the window. This information can be very handy in knowing how to scale the curve column in the log. It is also required if you want to build an automatic log design in the 4th screen of the import wizard.

3. If you would like a text listing of the curve names along with the minimum and maximum data values and the measurement units, click the **Report** button. This text listing can be saved, copied, or printed from the text window.
4. Select the curves you wish to import by inserting a check-mark next to their names. The check-marks are “toggle” marks – clicking in a checked box removes the check-mark, and clicking in an un-checked box inserts a mark. You may select up to 40 curves. Use the **All** or **None** buttons to insert/remove automatically all of the check-marks.
5. Finally, you may edit the curve names if necessary, either to assign them more intuitive names or to match curve names in an existing log design. Simply highlight the curve name’s text and type in a new name.

! This is pretty important. If you will using the LAS data in an existing log design, then you should update the curve names to match the names of the curve columns in the log design.

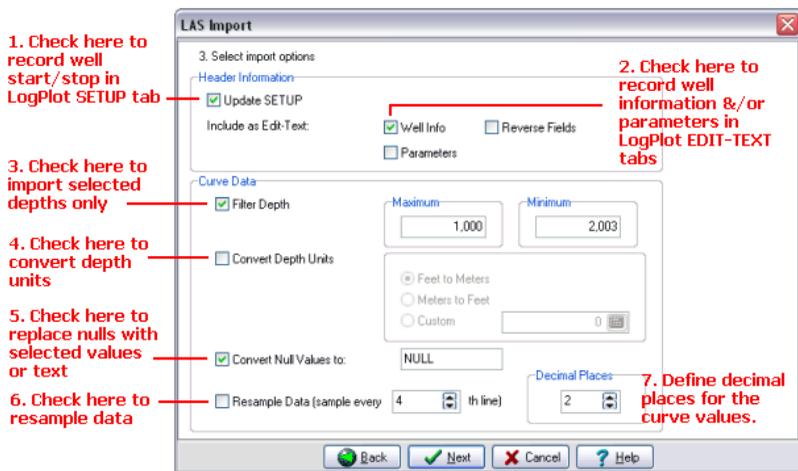
6. Click on the **Next** button.

Step 3: Set up the import parameters

On the third screen of the import window, you can establish some header and filtering information.

! At any time you can click the **Back** button in this window if you need to back-track to the first screen (to review header summary information) or to the second screen (to see curve summary and null value information).

Entering Your Data



1. **Update Setup:** Insert a check here if you want the depth at log top and depth at log base in the Setup tab of the current LogPlot DAT file to be updated with the Start and Stop depth listed in the header of the LAS file.

2. **Include as Edit-Text:**

Well Info: Insert a check here if you want the well information (company name, well name, field name, etc.) to be extracted from the LAS header and be listed as Edit-Text entries for inclusion in your log's header and/or footer.

Parameters: Insert a check here if you want the well parameters (elevation, temperatures, etc.) found in the "Parameter Information Block" of the header to be imported as Edit-Text entries for inclusion in the header/footer.

3. **Curve Data**

Filter Depth: Insert a check here if you wish to import a subset of the entire depth range represented in the LAS file. If activated you can type in the top and bottom depth to be imported. This filter will apply to all of the curves.

Convert Depth Units: Insert a check in the **Convert** box if you want the depth units to be translated from Feet to Meters, Meters to Feet, or converted using a customized conversion factor. Click in the appropriate radio button, and, if **Custom**, type in the value by which the LAS depth units are to be multiplied.

Convert Null Values: Insert a check here if any null values in the LAS file should be replaced by a specified number, character, etc. The null values (such as "-999.25") can be replaced by a numeric value (such as 0), by a non-numeric value (such as ND or NO DATA) or by a blank (just leave the prompt box blank). When LogPlot plots curves, numeric null-replacements will be plotted at their true value. Non-numeric replacements and blanks will be skipped.

Resample Data: Insert a check here to skip some of the lines of the input file, and specify the sampling interval. For example, if the LAS data is recorded every 0.2 feet but you prefer a resolution of 1-foot for use in LogPlot, you would set the interval to every 5th line.

Decimal Places: Type in the number of decimal places to be listed for the curve data values.

4. Click **Next**.

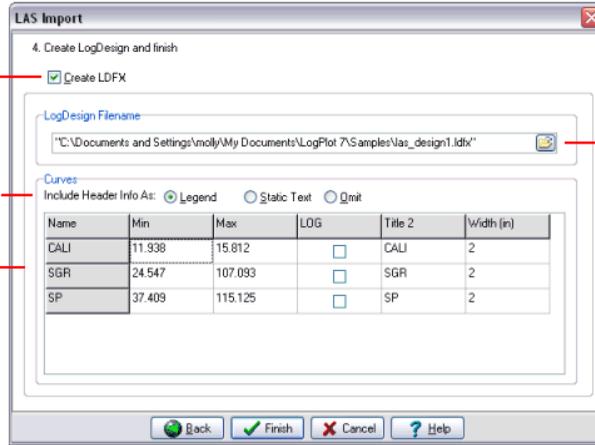
Step 4: Set up the log design

On this final import screen, LogPlot offers the option of creating automatically a *very basic* log design based on the imported LAS data.

1. Check this box if you want a basic log design to be created for this data.

3. Choose which type of header labeling you want.

4. Set up the curves. See text for details.



2. Click here to enter the name for the LDFX file.

1. **Create LDFX:** Insert a check in this check-box if you want the program to generate a log design for this data file. You might want to do this the first few times you use the program, as the generated design can be a good launching pad for creating your own designs. Once you have modified the design to include the more detailed information you'll probably want, then you should not opt for the automatic LDFX file.
2. **LogDesign filename:** Click on the open-file button to the right of the prompt to enter a name for the new log design file (.ldfx) to be created.
3. **Include Header Into As:**

Click in the **Legend** button if you want to include a Curve Legend above each curve column in the output LDFX file.

Click in the **Static Text** option if you want to include a small Static Text label above each curve in the output LDFX file, as shown in the image to the right.)

Click **Omit** if you prefer to omit curve column headings altogether.

Note that you can always add/change any of the design items after import is complete.
4. Next, review the curve information:

The **Min** and **Max** shown here represent the values to correspond to the left and right edges of each curve column on the log. They will default to the data minimum and maximum for each curve. You can accept the defaults or (if you prefer to round the column extents) type in preferred **Min** and **Max** column values. For example, you might want to change a default data range of **Min** = 4.951 and **Max** = 38.453 to **Min** = 0 and **Max** = 50.

Entering Your Data

This does not affect the data itself - it just tells the program how to set the left and right edge of the curve's column in the log design.

Log: This check-box can be used to set the curve column to a logarithmic rather than linear scale.

Caption: These will be the text listed in the Static Text header labels inserted into the log design if you have activated the **Include Header Caption** check-box. The default text corresponds to the curve's name (in the left column). You can type in a preferred label of up to 60 characters including spaces. Note that neither Legend nor Static Text labels wrap, so you should keep the titles short.

Width: This establishes the width of each curve column in inches (or centimeters). The more columns you have selected, the narrower these will default so that they'll fit into the design.

! Note that all of these settings can be modified later in the Log Designer screen.

5. Click the **Finish** button at the bottom of the LAS Import window to proceed.

The program will create a Multi-Curve data tab in the current data window, with column headings corresponding to the names of the curves you selected. The first (left-most) column will contain depths *, listed at the "Step" indicated in the LAS file. The depth range will correspond to the LAS file's Start and Stop depths, or a filtered depth range if you specified that. Each curve's data values will be listed in its column. If you requested replacement of null values with a particular replacement, these should be visible in the curve listings.

The program will also store on disk an LDFX file, if you requested one.

* Some LAS files list measurements by elevation rather than depth. You can probably tell by the Start and Stop values in the file. LogPlot usually expects data to be listed as depths. If you need to convert elevations to depths, use the right-click **Column / Math / Constant** tool to subtract the surface elevation value ("Start") from the elevation listings in the Depth column, re-storing the new depth values in the Depth column.

What Next?

1. Save the imported data: Choose the Data Editor's **File / Save** command, and type in a name for this file. LogPlot data files use the file name extension ".DAT". (See Saving Data Files, page 145.)
2. Access the log design: If you requested an automatic log design during the import, access the Log Designer window and you'll see the LDFX file created by the importer. You'll probably note at this time that it's a *very basic* design. No fancy stuff. You can take some time at this point to jazz up the design (add header information, depth scale, curve grid lines and legends, change the curve appearances, etc.). (See Log Designer Introduction, page 21.) Or, you can proceed to #3 to compile the data as-is into the log design as-is.

If you have an existing log design into which this data is to be plotted, you should access the Log Designer window and use **File / Open** to open that LDFX file. To cross-check the files, you might click back into the Data Editor window and select **Data / Check Data Against Log Design**. This will give you a report of mis-matched items in the data and design files. You can update either as necessary, or go ahead and compile anyway.

3. Compile the data into the design: Click into the Data Editor window where the LAS curves are stored. Click the Compile button  or choose **Log / Compile a log**.

Accept the default log top and base. Set the scale to an appropriate vertical scale for the data range, in depth units per inch or cm. Be sure **Positive Depths** is checked if the log top and base are listed as positive values. Be sure it is not checked if the top and base are entered as negative values.

In the Header + Footer tab, you will probably want to check the **Continuous Output** checkbox, a typical setting for long elog displays. Click the **Print Setup** button along the right to double-check your printer settings. (See Compiling Logs, page 223.)

Click **OK**.

The program will compile the available data into the current log design and display the graphic strip log in a Log View window. (If you see a message "The bottom must be lower than the top of a boring log", click OK and then check or un-check the Positive Depths setting and try again.)

4. Use the scroll bars and PgUp and PgDn buttons or keys to move around in the log display and to move to different pages. LogView can be used to save, print, and export your graphic logs. (See LogView Introduction, page 231.)
5. Go back to the log design if necessary to make changes, additions, etc., and then re-compile.

Importing RockWorks2004/2002 Borehole Data

The Data Editor's RockWorks import tool reads .BH (borehole) files containing downhole data from the RockWorks program, versions 2004 and 2002. The import tool automatically creates a new LogPlot data file, populated with the required data tabs for the different borehole data types. The import tool imports individual .BH files, one at a time, creating a complete .DAT file.

! If you want to open data from a RockWorks2006 database (MDB), you can do so easily via the File Manager.

How to...

Import RockWorks2004/2002 .BH Files

1. Click in the Data Editor window.
2. Select the **File / Import / RockWorks Boreholes** menu option.
The program will display a dialog box.
3. Browse to the folder where your existing .BH files reside. (In RockWorks, this is called a "project folder.")
4. Select the name of the .BH file to import.

LogPlot will read the contents of the RockWorks .BH file and generate LogPlot data tabs for each data type. Here is a listing of the comparable data types:

RockWorks data item	LogPlot data item
Location	Setup, Edit Text

Entering Your Data

Orientation	Orientation
Lithology	Lithology
Stratigraphy	Lithology
Intervals (I-Data)	Multi-Interval Data
Points (P-Data)	Multi-Curve
Fractures	Tadpoles
Water Levels	Vertical Text
Symbols	Symbol
Patterns	Well Column
Bitmaps	Bitmap
Vectors	n/a

5. Save the imported data (choose File / Save) as a LogPlot .DAT file.

There are a few other housekeeping details you'll need to do so that your RockWorks borehole data can be displayed in a LogPlot log:

Import your Lithology and/or Stratigraphy Tables

1. Use LogPlot's **Tools / Edit Keywords** option to access the Keyword Editor.
2. Use its **File / Import** command to import your RockWorks lithology table or stratigraphy table into LogPlot.
3. Use its **File / Append to Current File** command to append the keywords to your existing table.

Open/update the RockWorks Log Design

1. In the Log Designer, open the sample file "RockWorks BH.Idfx".
2. Use the Data Editor's **Data / Check Data Against Log Design** command to see where the sample layout doesn't match your imported data file.
3. Make the necessary changes to the design file. You will probably need to remove some design items, and add others that are missing. Be sure to check the curve and bar graph column ranges to assure they match your data range.

Importing Excel Data

The Data Editor's Excel import tool reads data from multiple worksheets in a single Excel file into one or more LogPlot DAT-format files.

! NEW: You can import data for more than one borehole from a single XLS file. The required file structure is different for single-well versus multiple-well files.

The format of the Excel data to be imported must be the same as that produced by the export-to-Excel program (**File / Export / Excel**). The worksheet titles in Excel must be identical. See Excel File Format in the Help messages for details. There must be no blank rows within the Excel worksheets. Otherwise, the import program will stop reading that particular worksheet as soon as a blank row is encountered.

! We HIGHLY recommend that you create a sample file in LogPlot that contains a representation of the data you'll be importing, and export that data to Excel, either with data or without - as a template - in order to generate the proper worksheet tabs. Use the exported Excel spreadsheet as the guide for formatting the data to be imported into LogPlot.

How to...

Import Excel .XLS Files

1. Click in any open Data Editor window. If none is present, create a new Data Editor window.
2. Select the **File / Import / Excel** menu option.
The program will display a dialog box.
3. Browse for and the desired Excel spreadsheet to be imported. These files typically have an .XLS file name extension. Click on the file's name to select it, and click OK to continue.

LogPlot will read the contents of the Excel file and generate LogPlot data tabs for each worksheet, where the data will be listed. It will be able to determine, based on the structure of the XLS file, whether you are importing data for a single well or for multiple wells; if the latter then multiple data windows will be created.

! The data is stored in memory only at this point.

4. Choose **File / Save** to save each borehole's data as a LogPlot DAT file. (See Saving Data Files, page 145.)

Here is a listing of the comparable data types:

Excel Worksheet	LogPlot data item	Excel Worksheet	LogPlot data item
SETUPGRD	Setup tab	MCR_GRID_MULTI_CURVE	Multi-Curve tab
BMP_GRID_ <i>name</i>	Bitmap tab	MHS_GRID_MULTI_HISTOGRAM	Multi-Interval Data tab
MCR_GRID_MULTI_CURVE	Crossplot Curves tab	SCB_GRID_ <i>name</i>	Orientation tab

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CRV_GRID_name	Curve tab	PPP_GRID_name	Pattern Percent tab
NOTGRD	Edit Notes tab	SCA_GRID_name	Scale Table tab
EDT_name_GRD	Edit Text *	SYM_GRID_name	Symbol tab *
FIL_GRID_name	Fillbar tab	TAD_GRID_name	Tadpole tab
HZL_GRID_name	Horizontal Line tab	TXT_GRID_name	Text Column tab
INB_GRID_name	Interbed tab	VTX_GRID_name	Vertical Text tab
HST_GRID_name	Interval Data tab	WCN_GRID_name	Well Column tab
LTH_GRID_name	Lithology tab		Lithology tab

* the name field is optional for edit text data. If no group name is defined, the worksheet name is EDITGRD.

See also: Exporting Excel Data (next), Excel File Format (**Help / Contents / Entering your Data / Importing Data**)

Exporting Data from LogPlot

Exporting LAS Data

The Data Editor's LAS export tool creates LAS (Log ASCII Standard) files, version 1.2 - 2 for use in other software applications. You can export: curve, interval data, multi-curve, multi-interval-data, orientation, pattern percent and tadpoles.

This process requires several steps which are listed below. Please refer to the Help messages for additional information.

How to...

Specify the Output File Name and Format

1. If necessary, open into the LogPlot data editor the data file (.DAT) to be exported .
2. Select the **Export** command from the Data Editor's **File** menu.
3. From the pop-up menu, select the **LAS** option.

The first import window is used to enter a name for the file to be exported:

4. **LAS Filename:** Click on the open-button  on the right side of this prompt. In the **File Name** prompt, type in a name for the exported file, with "LAS" as the file name extension. Click the Open button to the right.
5. **Format:** Click in one of the two buttons.

ASCII: This is the default format, and the most commonly used. This option tells the program to create a standard ASCII text file, with rows separated by carriage return and line feed characters. This is the LAS standard.

Unix + Mac: Choose this option if you've been requested to use this format. The rows are separated by line feed characters only.

6. Click on the **Next** button.

Enter the depth units for the LAS export

On the second screen of the import window, you'll need to establish some information about how the depths are currently entered, and how they are to be exported.

1. **Depth Units:** Click in the radio button that corresponds to the depth units in which your LogPlot data is entered. If it's not in feet or meters, click in the Other button and type in the Units name. This information is recorded in the curves' header section of the output file.

2. Start, Stop, Step:

Starting Depth: The default value here is taken from the DAT file's Setup tab. Overwrite this as necessary if you wish to export a different subset of the data.

Ending Depth: The default value here is taken from the DAT file's Setup tab. Overwrite this as necessary if you wish to export a different subset of the data.

Step (Interval): ! This is an important setting, since it determines the interval at which the curves table will be recorded in the output file. (LAS format allows a single table with multiple columns.)

If all of your Curves tables and Lithology Percent tables are recorded at the same depth intervals (such as 1 foot), then simply enter that value (such as 1.0) for the step interval.

If your data are recorded at various depth intervals, then you'll need to figure out an optimal output step interval. You'll also need to decide on a resampling method, below.

If you've been requested to submit data at a particular interval, then enter that here.

Resampling Method: If the data being exported is listed in the LogPlot file at different depth intervals, the program will have to resample the listings to comply with the **Step** setting defined above.

Weighted Average: Choose this option to have the program perform a distance-weighted selection of the data values, locating the two closest depths to the resampled interval and averaging their data values based on their distance from the resampled interval. The closer value will be weighted more than the more distant value.

Closest Point: This option simply selects the point closest to the resampled interval.

3. Additional Information:

Positive Depth: Insert a check here if the depths are to be exported as positive values.

Null Value: Type here the value to be used to represent null values in the output file. For LAS files, this is typically set to -999.25, and this value will be used to represent any blank cells in the data file.

Entering Your Data

Depth Decimals: Use the up- or down-arrow to set the number of decimal places to be used in the recorded depth values.

Data Decimals: Use the up- or down-arrow button to set the number of decimal places to be used to record the curve, percent, interval, and other data. Note that this will be used for *all* exported columns - be sure to use an adequate number.

Use Fixed Column Widths: Insert a check here if all of the columns are to be set to a fixed width. Use the up- or down-arrow to define the number of spaces to allot to each column. LAS files use <Space> characters to pad the columns.

Fixed Width off:

```
0.01 55.00 10.00
0.01 8.00 10.00
```

Fixed Width on, set to a width of 8 characters:

```
0.01   55.00   10.00
0.01    8.00   10.00
```

4. Click **Next**.

Select the data to export

On the next screen is listed all of the data in the current LogPlot DAT file that can be exported into the Curves section of the LAS file. This can include data listed in the following LogPlot data tabs:

- Curve and Multi-Curve
- Interval-Data and Multi-Interval-Data
- Orientation
- Pattern Percent
- Tadpoles

1. Each of the data listings will be checked by default. Remove the check-marks from those you don't want to export.
2. Name: This column will be populated automatically by the names assigned in LogPlot. You can change the names as necessary.
3. Additional information: the Units, API, and Description cells can be left blank, or you can type in necessary information for listing in the Curves header block in the output LAS file. Use the Fixed Width column to specify the number of characters for the column, if required by the software that will be reading the LogPlot-generated LAS file.
4. Click on the **Next** button.

Fill in the Well Information and Export

On the fourth screen of the import window, you can establish some miscellaneous header information.

1. Fill in any of the fields for which you have data to be included in the exported file. This information is stored in the well information block in the output file.

2. Click **OK**.

The program will read the data in the current DAT file and, using the setup parameters you've established, export the data to LAS format. The output LAS file will be saved on disk under the file name you specified. You will be returned to the main LogPlot program window.

Exporting Excel Data

The Data Editor's Excel export tool creates an Excel file with individual worksheets for each datasheet in a single or multiple LogPlot DAT file(s). Each worksheet will be labeled with the data type (text versus symbols versus lithology, etc.) and with the specific entity name. Note that (at the time of this writing) Excel limits worksheet names to 31 characters. If your LogPlot entity names are lengthy, they might exceed this limit when combined with the data type; see the Excel File Format (in the online Help) for details.

The worksheets can be created with data or with column headings only, to act as a template. The file is loaded automatically into the Excel program upon completion of the export process. The exported file has the same format as required for importing Excel data into LogPlot.

You can use this tool as a means of getting your LogPlot data transferred to another software application, via Excel. You can also use this as a means of formatting field data in Excel for future import into LogPlot.

This tool requires that Excel be installed on your computer.

How to...

Export a LogPlot DAT file to Excel format

1. Be sure the DAT file(s) containing the data you wish to export is/are currently open in LogPlot. For a single file export, be sure it is in the visible data window.
2. Select the **File / Export / Excel** menu option.
3. In the displayed window, enter the requested information:

Template Only (no data): Choose this if you want to generate worksheets in Excel with column titles only, to serve as a template for entering data for later import. It will format the template based on the current DAT file.

Multiple Logs Template Only (no data): Choose this if you want to generate worksheets in Excel with column titles only, to serve as a template for entering data for later import. It will format the template based on all open DAT files.

Current Log: Choose this option if you also want to export the data listed within the LogPlot datasheets, for the current DAT file.

All Open Logs: Choose this option to export the data listed within all open DAT files.

4. Click **OK**.

LogPlot will generate an Excel-format file containing a worksheet for each data tab, each with column headings identifying the data listed, with or without actual data, for the current DAT file or all DAT files, as you requested. The file will be loaded into Excel.

See also: Excel File Format (Help / Contents / Entering Your Data / Exporting Data)

Exporting RockWorks2004/2002 Borehole Files

Entering Your Data

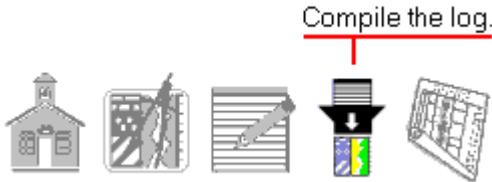
RockWare has a stand-alone program designed to read one or more LogPlot DAT files and reformat them to a RockWorks2004/2002 BH (borehole) file format. This program is available free of charge from the RockWare web site. It does not require an unlocking code.

RockWorks2006 can import LogPlot DAT files directly, and no separate import program is needed.

See **Help / Contents** / Entering Your Data / Exporting Data for more information.

Chapter 4 - Compiling Your Logs

Compiling Logs Introduction



"Compiling" a log is the process of LogPlot reading the data contained in the current Data Editor window, matching data items to the items in the current log design, plotting the data in the design based on the program settings, and displaying the log on the screen. You can compile the data from a single DAT file into a log, or from multiple DAT files.

Establishing Program Settings

Prior to compiling data into a graphic log plot, you should review or establish a variety of program settings so that LogPlot will be able to compile the data according to your preferences.

1. To access the program settings, click on the **Options** button  or click on the **Options** menu. (Note that the log options are also accessible from within the **Compile a Log** dialog box.)

The program will display a set of dialog boxes with stick-up index tabs.

All of the settings that you can establish here are saved within the program and do not need to be changed unless your preferences change. These topics are in the Reference section of this manual.

Log Settings: Select the log design, vertical scale and units, continuous v. single-sheet logs, header/footer assignments, starting page number, and pattern & symbol settings. These settings can also be accessed from within the Compile Log windows. See page 275.

System Settings: For log compiling, check the lithology and text options (reversed lithology intervals). See page 283.

Program Files: Select the active keyword, pattern, and symbol files for the current log. See page 285.

Printer Settings: Double-check the selected printer and the current paper size, type, and orientation. See page 287.

Compiling a Single Log

The process of compiling a single log involves selecting the data file that contains the data to be displayed on the log, and establishing the compiling settings.

How to...

Select the Data File

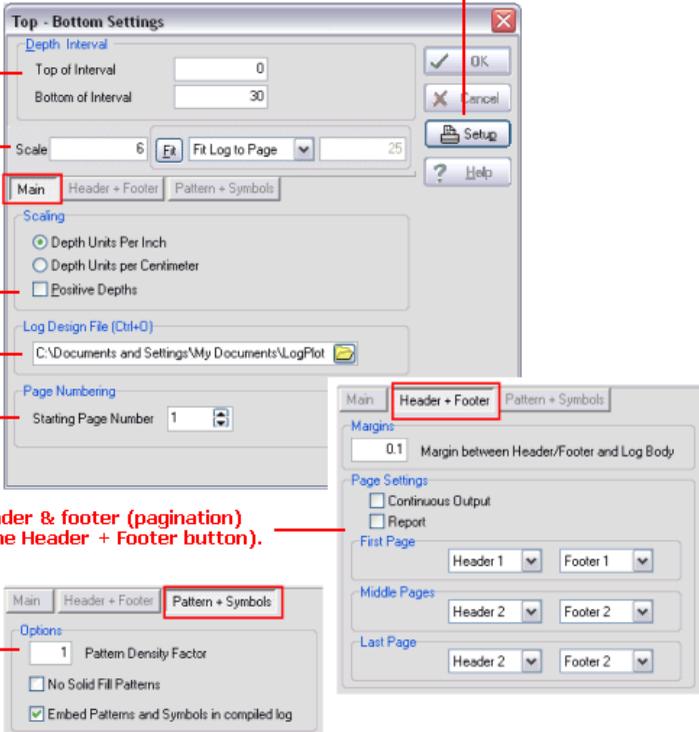
Compiling Your Logs

1. Click in the Data Editor window containing the data you wish to compile into a log.
2. Select the **Compile** button  from the Data Editor toolbar. Or, you can select the **Compile a Log** command from the Data Editor's **Log** menu.

Set the Compiling Settings

The program will display a dialog box where you can confirm a number of log settings. These options are also established under the **Options / Log Settings** menu. See references for each step under "topics" below.

1. Verify the printer & page settings.
2. Verify starting and ending depths for log.
3. Set vertical scale.
4. Verify current log design (LDFX) file.
5. Set starting page #.
6. Establish the header & footer (pagination) settings. (Click the Header + Footer button).
7. Check pattern & symbol settings. (Click on the Pattern + Symbol tab.)



8. When all of the settings are displayed to your satisfaction, click on the **OK** button to have the program compile the data into a plottable log.

That's it! The program will read the data contained in the Data Editor window and match it to the items that are declared in the log design you have selected. When all data items have been processed, the completed log will be plotted in a new window on the screen.

If the program encounters problems compiling your data, it will usually let you know and show you the location in the data file with which it is having problems.

Topics:

- Verify the page and printer settings (page 287).
- Confirm the starting and ending depths for the log (page 275).
- Verify the current log design (LDFX) file (page 275).
- Set the vertical scale (page 276).
- Set the starting page number (page 279).
- Establish the header and footer settings (page 279).
- Establish pattern and symbol settings (page 282).

See also:

Errors During Compiling (page 288) for tips on data, and on problems with the appearance of your log.

Viewing Your Log (page 231) for information on viewing, printing, and exporting the log plots.

Compiling Multiple Logs (next) for information about compiling all open data files.

Compiling Single/Multiple Logs using the File Manager (page 227) for quick-compile options.

Compiling Multiple Logs

The process of compiling multiple logs involves selecting the data files that contain the data to be displayed on the logs, and establishing the compiling settings. This tool functions just like the single-file compiler, but with these exceptions:

- The top and base of the logs will be set to the depths in each data file's Setup tab (no override),
- There are no Fit Log to Page or Fit Units per Page options for scaling.

How to...

Select the Data Files

1. Open the data files you wish to compile.
2. When you are ready to compile all of the open data files, select the **Compile All** button



from the Data Editor toolbar. Or, you can select the **Compile All** command from the Data Editor's **Log** menu:

Set the Compiling Settings

The program will display a dialog box where you can confirm a number of log settings. These options are also established under the **Options / Log Settings** menu. See references for each step under "topics" below.

Compiling Your Logs

1. Verify the printer & page settings.

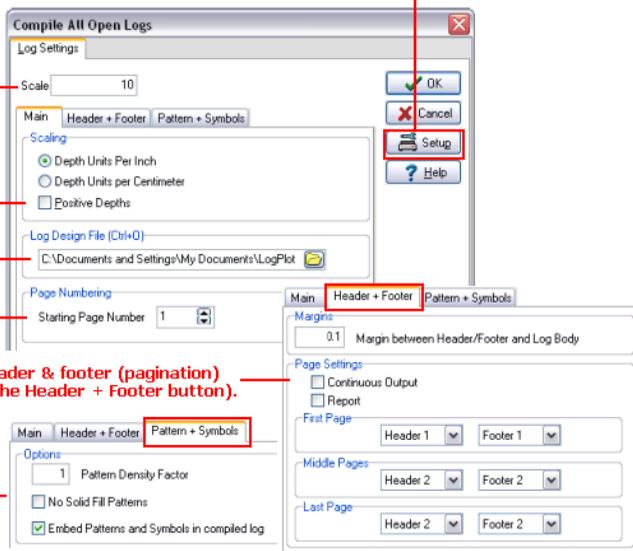
2. Set vertical scale.

3. Verify current log design (LDFX) file.

4. Set starting page #.

5. Establish the header & footer (pagination) settings. (Click the Header + Footer button).

6. Check pattern & symbol settings. (Click on the Pattern + Symbol tab.)



7. When all of the settings are displayed to your satisfaction, click on the **OK** button to have the program compile the data in all open DAT files into plottable logs.

That's it! The program will read the data contained in the Data Editor windows and match the fields to the items that are declared in the log design you have selected. When all data items have been processed, the completed logs will be plotted in separate windows on the screen.

If the program encounters problems compiling your data, it will usually let you know and show you the location in the data file where it has encountered a problem.

Topics:

Verify the page and printer settings (page 287).

Verify the current log design (LDFX) file (page 275).

Set the vertical scale (page 276).

Set the starting page number (page 279).

Establish the header and footer settings (page 279).

Establish pattern and symbol settings (page 282).

See also:

Errors During Compiling (page 288) for tips on data, and on problems with the appearance of your log.

Viewing Your Log (page 231) for information on viewing, printing, and exporting the log plots.

Compiling Single Logs (previous) for information about compiling one data file.

Compiling Single/Multiple Logs using the File Manager (below) for quick-compile options.

Quick-Compiling Single or Multiple Logs

New! You can use the LogPlot File Manager to quick-compile single or multiple logs. The process involves selecting the log design to be used, selecting the data file(s) that contain the data to be displayed on the log(s), and choosing the Compile option from the right-click menu.

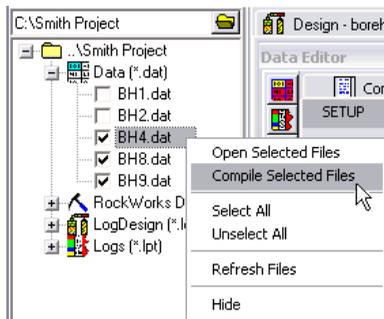
How to...

Open the Default Log Design

1. Use either the menus or the File Manager to open the log design (.LDFX or .LDF file) to be used.

Select the Data File(s) using the File Manager

1. Expand the File Manager's **Data** heading, as necessary.
2. Insert a check-mark next to the name(s) of the DAT files you wish to compile. You can select one DAT file or multiple DAT files in the current project folder.
3. Right-click in the File Manager.
4. Choose **Compile Selected Files** from the pop-up menu.



Set the Compiling Settings

The program will display a dialog box where you can confirm a number of log settings. These options are also established under the **Options / Log Settings** menu. See references for each step under "topics" below.

Compiling Your Logs

1. Verify the printer & page settings.

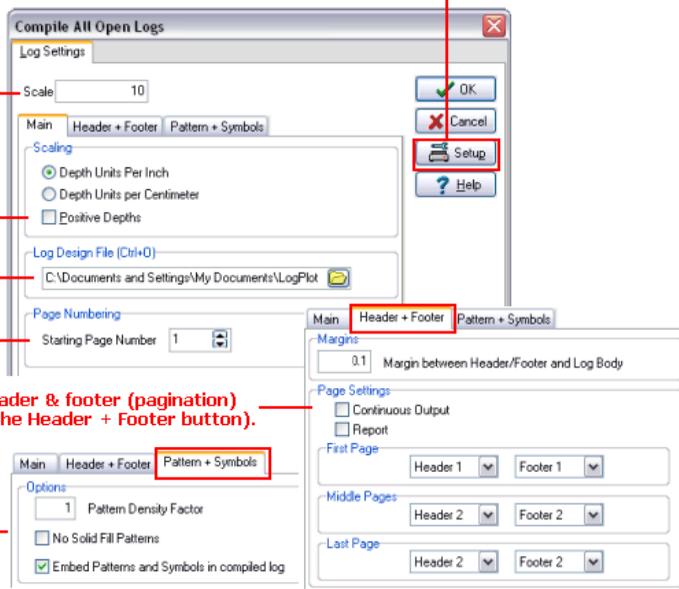
2. Set vertical scale.

3. Verify current log design (LDFX) file.

4. Set starting page #.

5. Establish the header & footer (pagination) settings. (Click the Header + Footer button).

6. Check pattern & symbol settings. (Click on the Pattern + Symbol tab.)



7. When all of the settings are displayed to your satisfaction, click on the **OK** button to have the program compile the data in all open DAT files into plottable logs.

That's it! The program will read the data contained in the Data Editor windows and match the fields to the items that are declared in the log design you have selected. When all data items have been processed, the completed logs will be plotted in separate windows on the screen.

If the program encounters problems compiling your data, it will usually let you know and show you the location in the data file where it has encountered a problem.

Topics:

Verify the page and printer settings (page 287).

Verify the current log design (LDFX) file (page 275).

Set the vertical scale (page 276).

Set the starting page number (page 279).

Establish the header and footer Patterns (page 279).

Establish pattern and symbol settings (page 282).

See also:

Errors During Compiling (page 288) for tips on data, and on problems with the appearance of your log.

Viewing Your Log (page 231) for information on viewing, printing, and exporting the log plots.

Compiling a Single Log or Compiling Multiple Logs (previous)

Compiling a Batch

The Data Editor's **Log** menu contains two tools for interactively compiling a single log or multiple logs from currently-open data files. The compiled logs are displayed in a Plot window on the screen, where you can select menu items for saving, printing, and exporting the graphic log.

The **Log** menu's **Batch Compile** command lets you select multiple data files to compile. For each file, you can select a specific log design, plotting scale, and other items. Each compiled log can be printed and/or saved on disk as a LogPlot (.LPT) file.

! This is a different process than the "Command Line Batch" discussed in the Reference section. First, the menu-driven batch compiler lets you create the batch listing right within a program window. And, multiple files can be saved and printed. The menu-driven batch compiler does not offer screen display of the compiled logs.

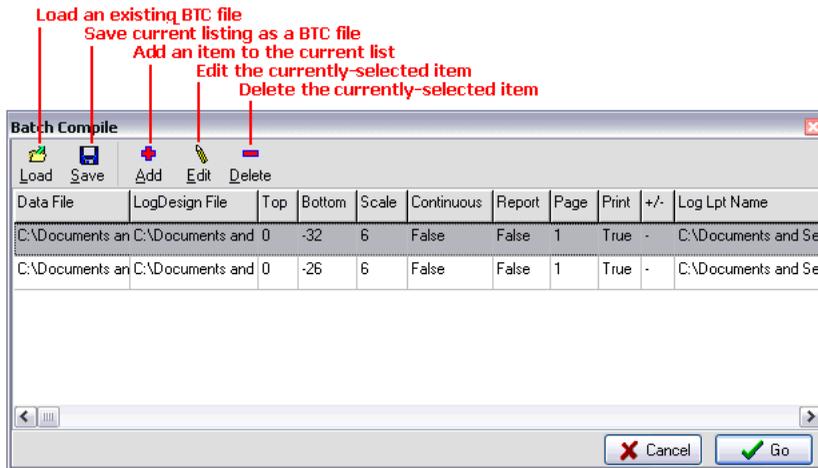
How to...

Compile and save/print a batch of data files

Follow these steps to compile and save/print a batch of data files:

1. Select the **Log / Batch Compile** command from the Data Editor window.

The program will display the Batch Compile window.



2. Select the **Add** button to add a new action to the listing.
The program will now display the Batch Editor dialog box where you can specify file names and settings for the new batch item.
3. First you need to select the name of the data file to compile. Click on the **Browse Data Files** button and locate the desired LogPlot data file, accessing other directories as necessary. Click on the file name to highlight it, and then click **OK** to select the file and return to the Batch Editor window.

Compiling Your Logs

The program will scan the data file's Setup tab and insert the **Top Depth** and **Bottom Depth** settings into the Batch Editor window. You may override these if necessary.

4. Next, you need to specify the name of the LogDesign File (LDFX) that contains the blueprint for the log. Click on the **Browse Format Files** button to locate the "LDFX" file for the selected data file. Click on the file name to highlight it, and click **OK** to select it.
5. Back at the Batch Editor window, you can specify both the plotting scale for the data and whether a header is to be inserted on every page. For more information, see Log Settings (page 275).
6. Finally, for this batch item, you can select whether the completed graphic log is to be printed (insert a check in the **Print** box) and/or saved on disk as a Log Plot file (insert a check in the **Save as LPT** file box).

If you have requested saving as an "LPT" file, click on the **Browse Output Files** button to enter the name for the ".LPT" file that will be created.

7. When all of the information for the data file listed at the top of the window is entered to your satisfaction, click on the **OK** button at the bottom of the Batch Editor window.

All of the information will be listed on the first line of the Batch Compile window.

8. If you want to add another data file to the batch, click on the **Add** button again and repeat this process.

If you want to edit any of the entries in the Batch Compile window, click on the line to be edited and then click on the **Edit** button at the top of the window. The program will retrieve the Batch Editor.

To delete any of the entries in the Batch Compile window, click on the line to be deleted, and then select the **Delete** button at the top of the window.

To save the listing, click the Save button, and type in a name for the ".BTC" file.

9. When you are ready to process the batch, click on the **OK** button at the bottom of the Batch Compile window.

The program will start with the first data file in the list, and compile it into the requested LDFX file at the indicated scale. (All other possible settings are assumed to be the current program defaults.) The completed log plot will be sent to the printer and/or saved on disk as requested.

If another item is listed in the batch, the program will process it next.

Chapter 5 - Viewing and Manipulating Your Logs

LogView Introduction

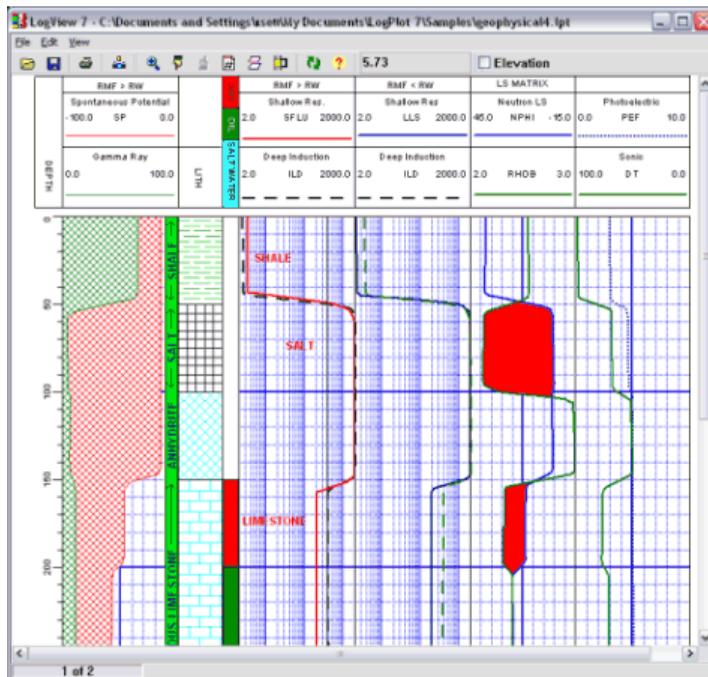
View/save/print/export the log.



When LogPlot compiles a new log it does the following:

- (1) It reads the data file.
- (2) It looks at the log design, the vertical scale, the printer page size, and other compile settings to determine how much of the data will fit on each page.
- (3) It compiles the data into the design, and displays the first page of the log on the screen in the LogView window.

The LogView window is used to display the compiled logs on your screen. From this window you can view, print and export the graphic logs.



Viewing and Manipulating Your Logs

A new LogView window is displayed each time a log is compiled in LogPlot. Multiple LogView windows can remain open at the same time, thus enabling you to compare logs, display them as a pseudo-cross-section, etc.

The LogView portion of LogPlot is available as a free viewer that you can distribute to your co-workers and clients so that they can open your graphic logs. See RockWare's web site for details.

Viewing Your Log Pages

LogView displays a single log page at a time on the screen. Use these instructions to view the current page, and to display different pages of a multi-page log.

If you need to make a change in any of the data that was compiled into the log, you'll need to return to the Data Editor, make the necessary changes, and recompile the log. You cannot make data changes to the plot file displayed in the View window.

How to...

View the current page

The current page number is always displayed at the bottom of the LogView window (Page 1 of 1, Page 4 of 11, etc.).

1. To view portions of the current page that are not visible, drag the scroll bars along the side and bottom of the Log View window to change the display area.
2. You can also drag the LogView window boundaries to make the window larger or smaller to view specific portions of the log.

Move to different pages

If your log occupies more than one page, you can use the **Page** commands in the **View** menu to view different pages of your log:

1. To advance to the next page of the plot, select the **View / Page Down** command. Or, click the **Page Down** button  or press the PgDn key.
2. To back-track to the previous page of the plot, select the **View / Page Up** command. Or, click the **Page Up** button  or press the PgUp key.
3. To jump directly to a specific page, select the **View / Go To Page...** command. Or, click the **Go To Page** button . The program will prompt you, "Go To Page..." Type in or use the up- or down-arrow buttons to declare the page number, and click OK. The program will display that page. If you enter a page number beyond the last page, LogView will simply display the last page of the plot.

See also: Adding Static Header/Footer Text (page 52) regarding automatic insertion of page numbers and total pages in your log header or footer.

Setting Depth Units per Page

LogView contains a tool (**View / Custom Page Length**) for repaginating a multi-page log based on a user-declared number of depth units to be plotted per page. This can be used to start new log pages at regular intervals, prevent mid-interval page breaks, etc.

The current version of LogView is limited to regularly-spaced page breaks. You cannot define different break points for each log page.

! This does not change the scaling of the log, which is defined at compile time and cannot be changed in LogView. This tool simply changes the number of units to be displayed per page, at the existing scale.

How to...

Set the depth units per page

1. First take a good look at your log pages to determine the best number of depth units to be displayed on each page of your log.

Note that if the layout of the log pages varies (e.g. the log contains a smaller Header 2 or if it doesn't include headers on each page), be sure to estimate the optimal number of units per page based on the page displaying the fewest depth units. That way it won't be clipped (though subsequent pages will have more white space).

2. Select the **View / Custom Page Length** command or click the **Custom Page** button



3. Insert a check in the **Enable Custom Page Breaks** check-box.
4. In the **Depth Units per Page** prompt, type in the number of depth units to be displayed on each page of your log.
5. Click OK and the program will repaginate the log to display the requested number of units on each page.

If LogView can't fit the requested number of units on the page, because of page size, header/footer size, header/footer margin, etc., you may see partial pages. If this is the case, follow the steps above to reset the number of units to a larger value (more log per page) and try again.

Changing the Depth Range of the Log

Use the **View / Select Interval** tool to change the starting and/or ending depth represented on the current log, to display a subset of the entire compiled depth range.

! This does not change the scaling of the log, which is defined at compile time and cannot be changed in LogView.

How to...

Set the depth range for the log

1. Select the **View / Select Interval** command or click the **Custom Interval** button .
2. **New Starting Depth:** Type in the depth at which you want the log display to start. The initial starting depth will be displayed above the prompt, and can be retrieved using the Reset button. You cannot enter a starting depth that is outside the initial range of the log; this tool is designed to display a subset of the data.
3. **New Ending Depth:** Type in the depth at which you want the log display to end. The initial ending depth will be displayed above the prompt; click Reset to retrieve the default.

4. Click OK and the program will repaginate the log to display the requested depth range.

Viewing Depth/Elevation Coordinates

Once a log is displayed in the View window, you can use the mouse pointer to determine the depth or elevation at any point on the log, in the units in which the log was compiled. This can be helpful if you wish to determine elevations at the top of stratigraphic units, for example, or to note the depth at which you wish to insert a text notation for a later re-compilation of the data.

! The interactive view of elevations will be accurate only for vertical boreholes.

How to...

View depth/elevation coordinates

1. Insert a check-mark in the **Elevation** check-box at the top of the LogView window if you wish to view the coordinates in elevations, or leave the check-box blank if you prefer to view points as depths below the surface.
2. Use your mouse to point to any place on the log, and view the coordinates displayed to the right of the toolbar buttons.
3. You can copy a particular depth to the clipboard using LogView's **Edit / Copy Depth** (Ctrl + D) command. With the mouse pointing to the location in question, press the Ctrl key while you type the D key, and the depth or elevation shown in the title bar will be copied to the clipboard. You can paste this number into another document using its **Paste** command.

Saving Your Log

When you have compiled a log and it is displayed on the screen in an untitled View window, you can save your log plot on disk so that you can re-open it at a later time for viewing or printing.

Notes: Log diagrams that you create in the LogPlot program are stored on disk in a "log plot" format with an "LPT" file name extension. This is the only type of plot file that LogPlot creates, opens, or saves.

You can *export* logs to a different graphic file format; see exporting logs.

LPT files store the log scaling, page size, and paper orientation (landscape versus portrait) so that when reopened they should appear as they did when first created. You can also store the pattern and symbol designs in the LPT file (rather than linking to external files), a setting you can establish prior to compiling the log. Bitmap images in the log header/footer or log body can also be either linked or embedded in the LPT file; these settings are established in the log design.

In typical Windows fashion, LogPlot will normally warn you if you try to close the View window if the log inside it has not been saved. You can turn this warning off, under the LogPlot Options / System Settings window.

How to...

Save a log plot as an LPT file

1. Be sure the log you wish to save is the active LogView window.

2. Select the **File / Save As** command, or the **Save As** button  from the View window's toolbar.
3. Enter the name to assign to the log plot file, accessing necessary drives and/or directories. LogView will automatically append an .LPT file name extension to the name you enter.
4. Choose the **OK** button when you are ready for the program to save the log plot.

See also: Distributing Logs to your Clients (page 248)

Printing Your Log

Any time that you have a log displayed in the View window on the screen, you can output the plot to a printer.

Notes:

The vertical scale of your log cannot be changed in the LogView window. The scale must be established **before** the log is compiled and displayed in the LogView window. If you wish to create the log at a different scale, you need to switch back to the main program window, change the vertical scale setting in the Compile window, and recompile the log.

LogView can, however, change the number of units plotted on each page at the current scale. See Setting Depth Units per Page (page 232).

How to...

Print your log

1. Select the **Print** command from the LogView **File** menu, or click on the **Print** button



The program will display the standard Windows dialog box for the printer that you have selected.

2. Choose the page range for the print job, and the number of copies.
3. Use the Properties button to access printer-specific settings as necessary. (See your printer documentation for details.)
4. When you are ready to print, choose **OK**. Or, to return to the LogView screen without printing, choose the **Cancel** button.

See "Printing Tips" on page 291 if you need help.

Opening/Accessing a LogView Window

When the LogPlot program first starts, only the Data Editor and Log Design windows are open. If you proceed to compile a log, the program will then automatically open a "LogView" window in which it will display the plotted log.

If you do not wish to compile a log, but to open an existing log plot that you compiled earlier and saved on disk, you can do so by first accessing a LogView window, and then opening the saved log plot file (.LPT).

Viewing and Manipulating Your Logs

Because LogPlot lets you keep multiple LogView windows open at any time, it's pretty easy to lose track of which windows are open but buried on your computer screen. The second tip below offers instructions about finding already-open LogView windows.

How to..

Open a new LogView window

1. To open a new LogView window, click on the New-View button  or choose the **File / New / LogView** option from the main LogPlot menu.

The program will display a new, empty Log View window.

2. At this time, you can open a saved plot (.LPT) file by clicking the LogView window's **File / Open** command.

Access an existing LogView window

1. To access an existing Log View window, in which a log is already displayed, click on the **Window** menu in the main LogPlot toolbar. Displayed in this menu will be the names of the current LogView windows.
2. Click on the name of the window you wish to access.

The program will bring that window to the foreground.

Opening a Log

If you have saved a log plot on disk, as an .LPT file, it is possible to re-open it into a LogView window for viewing, exporting, and printing.

Because scaling, page size, and paper orientation are stored in the LPT file, these files should look the same when re-opened as they did when originally created. However, if you have a different printer now set as default, or are opening the LPT file on a different computer (presumably with a different printer), you may see a warning that the page size has changed. Follow the instructions under the Update Page Size topic, below.

! *Because of this different file structure, LogPlot 7 cannot open LPT files created in LogPlot98 or earlier versions of the program! It does open LPT files saved in LogPlot2005, LogPlot2003, and LogPlot2001.*

How to...

Open an existing LPT file

1. Access a LogView window, if necessary.
2. Select the **Open** button  from the toolbar, or the **Open** command from the LogView **File** menu.
3. Select the log plot (LPT) file that you wish to display on the screen by highlighting it and choosing the **OK** button. LogPlot creates and opens files in the "LogPlot format" (LPT) only.

The program will plot the first page of the log on the screen. You may use the scroll bars on the side of the View window to view hidden portions of this page, or you can advance to subsequent pages of the log, if any. The current page, and total number of pages is displayed in the Reference Bar at the bottom of the View window.

Update the page size

If your computer's current printer page setup is different than that stored in the LPT file, the program will display a warning, "The Log and Printer Page Size do not match. Do you want to adjust the page size?"

1. You will usually click **Yes** so that you can view the discrepancy and update the page to prevent clipping.

Click **No** if the log should be displayed as it was originally compiled, but there can be clipping that occurs.

If you clicked Yes, you will see a window showing your computer's current printer and paper size (top of window) as well as the paper size saved in the LPT file (bottom of window). This warning occurs because even similar printer models may have SLIGHTLY different active paper sizes (e.g. 10.67" x 8.17" versus 10.58" x 8").

2. What to do next depends on several scenarios:

- a. If your paper size is similar to the log's page size, you should just click the **Set Default Size** button, and then click OK. The log will be displayed on the screen at the new page size, to match your printer.

- b. If your paper is considerably smaller than the log, you should simply click OK, WITHOUT clicking **Set Default Size**.

The program will warn you that the log is larger than your printer paper and ask "Do you want to fix?" - you should click No.

The log will be displayed on the screen at full size, but if you then try to print, it may be clipped.

3. You can view the log and/or print the log (with caveats noted above).

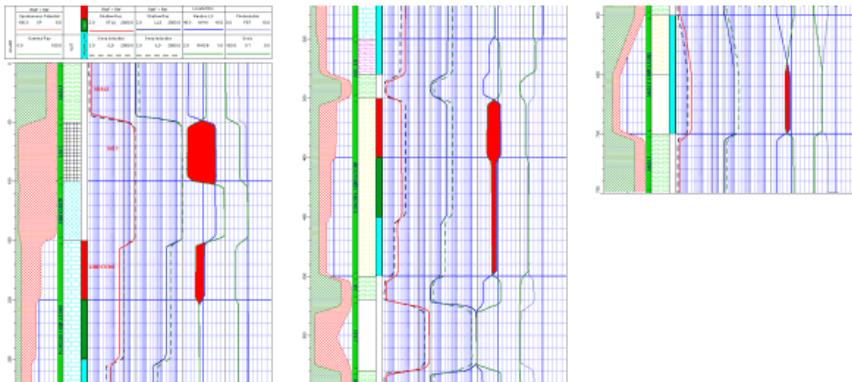
Opening a Log with a New Page Size

If you have saved a log plot on disk, as an .LPT file, it is possible to re-open later it into a LogView window for viewing, exporting, and printing. In most cases, you will use the **File / Open** command to re-open the LPT file using its default page settings.

However, there may be times when you want to display an existing log on a page of a different length, such as if you have a multi-page log that you wish to repaginate to a single, long page for printing to a continuous PDF file, or you need to set up the log for a different page size for a service bureau. In this case you can use the **File / Open with Page Dimensions** option.

Example: Let's say you have a 3-page log saved as an LPT file, originally compiled for letter-sized paper as a continuous log:

Viewing and Manipulating Your Logs



This log printed fine on your banner printer (the three pages chained continuously with no margins) but now your client wants a PDF version of the entire log, via Adobe Acrobat or any free PDF-generating program. You can use the **Open with Page Dimensions** option to set the "page" to 28 inches long to result in a single-page continuous log.

How to...

Open an existing LPT file and update the page size

1. Access a LogView window, if necessary.
2. Select the **File / Open with Page Dimensions** menu item.
3. Select the log plot (LPT) file that you wish to display on the screen by highlighting it and choosing the **OK** button. LogPlot creates and opens files in the "LogPlot format" (LPT) only.

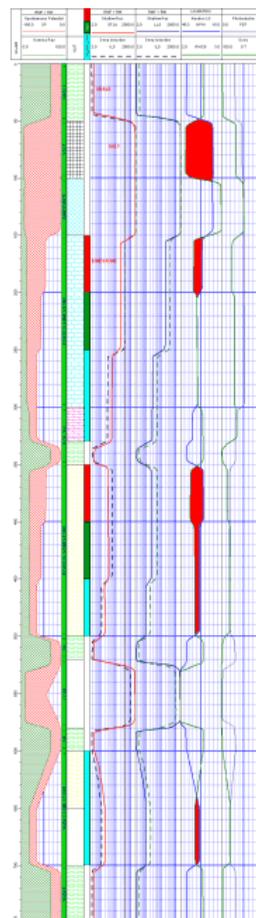
The program will then display the Page + Print Setup window. The current printer's information is displayed at the top of this window, including paper size and printable length/width.

4. You can click on the **Printers** button to choose a different printer model and/or to adjust the printer's settings. You would then click the **Set Default Size** button to make the log page comply to the new settings.

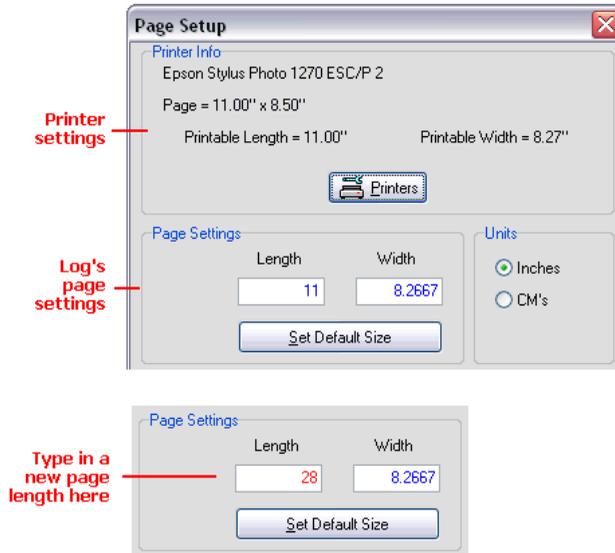
For example, if you plan to send the log to a service bureau for output to a plotter, you can choose that plotter here (if you've installed the plotter driver software) and set the page layout per their recommendations. The page size information can be saved in the LPT file that you send them.

The log's current page size is displayed at the bottom of the window.

5. You can override the default page size to trick LogView into using a longer page than your printer actually supports.



In the example at the top of this page, you could type in "28" for the page length to accommodate your 2.5-page log onto a single virtual page.



Note that the page length is now shown in red since it no longer matches the printer page size.

6. Click OK to accept your changes.

If you have overridden the page size to trick LogView into using a long page (as in the example in #5), the program will warn you that the page is too long for your printer, asking you whether you wish to fix this.

7. Click No.

The program will plot the log on the screen using the new settings. You may use the scroll bars on the side of the View window to view hidden portions of this page, or you can advance to subsequent pages of the log, if any. The current page, and total number of pages is displayed in the Reference Bar at the bottom of the View window.

! It's very important to note that any changes you make to the printer and/or page settings during this process are now the default printer settings throughout the LogPlot program, and they are automatically saved in the LPT file. Once you're done working with the LPT file, you may want to return to the main LogPlot window and return to your default settings using the **File / Page + Print Setup** option.

Opening Log Plot Files using the File Manager

How to...

Open a Single Log Plot File

1. Expand the File Manager's **Logs** heading, as necessary.

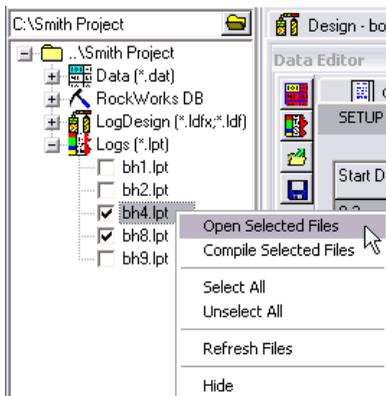
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2. Double-click on the .LPT file you wish to open.

LogPlot will open the selected graphic log into the Log View window. You can have multiple .LPT files open at the same time.

Open Multiple Log Plot Files

1. Expand the File Manager's **Logs** heading, as necessary.
2. Insert a check-mark next to the names of the .LPT files you wish to open.
3. Right-click in the File Manager.
4. Choose Open Selected Files from the pop-up menu.



LogPlot will open the selected logs into their own Log View windows.

Exporting Your Log

When you have compiled a log and it is displayed on the screen, you may save it in a native LogPlot format (LPT) as discussed under "[Saving Your Log](#)," or you may save the log in other, more universal graphic formats. Log export is available using the View window's **Export** command.

Export Logs as a Metafile (WMF or EMF)

This export tool exports the entire log to a metafile format. You can select the first-page header and final footer to be included in the export; the body of the log will be exported as continuous (no breaks, and no headers on intermediate pages).

The maximum plot length is 340 inches.

1. Be sure the log that you wish to export is displayed in the active LogView window.
2. Select the **Export** command from the LogView **File** menu.
3. Select the **Metafile (wmf + emf)** option.
The program will display the export dialog box.
4. Enter the requested information.

Windows Metafile (*.wmf), Enhanced Metafile (*.emf): Click in one of these radio buttons to determine the export metafile type.

Filename: Click on the Open-button  at the right edge of the prompt to enter the name to assign to the exported file, accessing other folders or drives as necessary. Click **OK** to return to the export dialog box. The program will append the appropriate file name extension (.EMF or .WMF) automatically.

Header: Choose which header to include at the top of the log - Header 1, Header 2, or No Header.

Footer: Choose which footer to include at the top of the log - Footer 1, Footer 2, or No Footer.

5. Choose **OK** to continue.

The program will store the log on disk in the selected metafile format, under the declared file name. This WMF or EMF log can then be opened in other graphics applications, inserted into word processing documents, etc. Note that you cannot open the WMF or EMF version of the log within LogView.

You may find that the appearance of the WMF or EMF file can vary greatly, depending on the application being used to view it.

Export Logs as BMP

This export tool exports the current log page or the entire log (**NEW!**) to a Windows Bitmap (BMP) format.

1. Be sure the log that you wish to export is displayed in the active LogView window.
2. If you will be exporting a single page only, advance to the page you wish to export as necessary, by clicking the Page Down, Page Up, or Go To Page buttons in the View window toolbar.
3. Select the **Export** command from the View window's **File** menu.
4. Select the **BMP** option.
5. **Filename:** Click on the Open-button  at the right edge of the prompt to enter the name to assign to the exported file, accessing other folders or drives as necessary. Click **OK** to return to the export dialog box. The program will append the appropriate file name extension (.BMP) automatically.
6. **Colors:** Select the number of colors you wish to have stored in the exported file. Bear in mind the greater the color depth, the larger the output BMP file. For your reference, the program will display in the window the output file size under current settings.
(Note that some of the other bitmap-type exports in LogPlot - such as JPG or PNG - will create *much* smaller output files using high color.)
7. **Pixels/Inch:** In this prompt, type in the number of bitmap pixels you want per horizontal and vertical inch of the bitmap image. For display on screen, the default settings of 96 (your screen pixels per inch) should work fine.

For print output, you should enter a greater value. How much greater? As with the colors, the resolution will have a great effect on the output BMP file size; the larger the number of pixels per inch, the larger the output file. (Again, refer to the program's file

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size reference right inside the export window.) You might start with a resolution of 150 pixels/inch and if you find this inadequate (too "pixely" or blocky in appearance) try again at 250 or 300.

8. **Entire Log:** *New* Insert a check here if your log occupies multiple pages and you wish to export the entire log as a single, long image. You can select the first-page header and final footer to be included in the export; the body of the log will be exported as continuous (no breaks, and no headers on intermediate pages).

Header: Choose which header to include at the top of the log - Header 1, Header 2, or No Header.

Footer: Choose which footer to include at the top of the log - Footer 1, Footer 2, or No Footer.

Scale: Select the vertical scale (number of depth units per inch or cm) for the output image. The default that is displayed will be the scale currently stored as default for the Compile settings.

9. Click **OK** to proceed.

The program will store the current page of the log or the entire log as requested on disk in a Windows Bitmap format. This BMP file can then be opened in other graphics applications, inserted into word processing documents, etc. Note that you cannot open the Bitmap version of the log within LogPlot.

Export Logs as JPEG

This export tool exports the current log page or the entire log (*NEW!*) to a JPEG (JPG) format.

1. Be sure the log that you wish to export is displayed in the active LogView window.
2. If you will be exporting a single page only, advance to the page you wish to export as necessary, by clicking the Page Down, Page Up, or Go To Page buttons in the View window toolbar.
3. Select the **Export** command from the View window's **File** menu.
4. Select the **JPEG** option.
5. **Filename:** Click on the Open-button  at the right edge of the prompt to enter the name to assign to the exported file, accessing other folders or drives as necessary. Click **OK** to return to the export dialog box. The program will append the appropriate file name extension (.JPG) automatically.
! The Log Designer window saves log design previews in a JPEG format using the design name plus ".preview.jpg". You might want to be sure you don't assign the export file this same name.
6. **Pixels/Inch:** In this prompt, type in the number of bitmap pixels you want per horizontal and vertical inch of the JPEG image. For display on screen, the default settings of 96 (your screen pixels per inch) should work fine.

For print output, you should enter a greater value. The resolution will affect the output JPG file size, but not by as much as it does the BMP export. You might start with a resolution of 150 pixels/inch and if you find this inadequate (too pixel-y or block in appearance) try again at 250 or 300.

7. **Colors:** Select Color or Grayscale for the output file.
8. **Compression quality:** Use the slider bar to select also the compression style. Generally, the greater the compression you select (by dragging the slider bar to the left) the lesser the output quality. Because the JPEG graphic format stores information very efficiently, you might start with relatively low compression to achieve better quality.
9. **Entire Log:** **New** Insert a check here if your log occupies multiple pages and you wish to export the entire log as a single, long image. You can select the first-page header and final footer to be included in the export; the body of the log will be exported as continuous (no breaks, and no headers on intermediate pages).

Header: Choose which header to include at the top of the log - Header 1, Header 2, or No Header.

Footer: Choose which footer to include at the top of the log - Footer 1, Footer 2, or No Footer.

Scale: Select the vertical scale (number of depth units per inch or cm) for the output image. The default that is displayed will be the scale currently stored as default for the Compile settings.

10. Click **OK** to proceed.

The program will store the store the current page of the log or the entire log as requested on disk in a JPEG format. This JPG file can then be opened in other graphics applications, inserted into word processing documents, etc. Note that you cannot open the JPEG version of the log within LogPlot.

Export Logs as PNG

This export tool exports the current log page or the entire log (**NEW!**) to a PNG format.

1. Be sure the log that you wish to export is displayed in the active LogView window.
2. If you will be exporting a single page only, advance to the page you wish to export as necessary, by clicking the Page Down, Page Up, or Go To Page buttons in the View window toolbar.
3. Select the **Export** command from the View window's **File** menu.
4. Select the **PNG** option.
5. **Filename:** Click on the Open-button  at the right edge of the prompt to enter the name to assign to the exported file, accessing other folders or drives as necessary. Click **OK** to return to the export dialog box. The program will append the appropriate file name extension (.PNG) automatically.
6. **Pixels/Inch:** In this prompt, type in the number of pixels you want per horizontal and vertical inch of the PNG image. For display on screen, the default settings of 96 (your screen pixels per inch) should work fine.

For print output, you should enter a greater value. The resolution will affect the output file size, but not by as much as it does the BMP export. You might start with a resolution of 150 pixels/inch and if you find this inadequate (too pixel-y or block in appearance) try again at 250 or 300.

7. **Colors:** For PNG, 24-bit color is the only option.

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8. **Compression:** PNG files can be created with varied compression; choose from Low, Medium or High. Generally, the higher the compression, the smaller the file size, but image quality can sometimes be degraded. Lower compression will result in slightly larger files, but will assure the best image quality.
9. **Transparent:** Insert a check here if you would like to choose a color in the image to be transparent, and select the color by clicking in the color box.
10. **Save Progressive:** Insert a check in this box to enable drawing of the image on the screen as it is being loaded in the destination application.
11. **Entire Log:** **New** Insert a check here if your log occupies multiple pages and you wish to export the entire log as a single, long image. You can select the first-page header and final footer to be included in the export; the body of the log will be exported as continuous (no breaks, and no headers on intermediate pages).

Header: Choose which header to include at the top of the log - Header 1, Header 2, or No Header.

Footer: Choose which footer to include at the top of the log - Footer 1, Footer 2, or No Footer.

Scale: Select the vertical scale (number of depth units per inch or cm) for the output image. The default that is displayed will be the scale currently stored as default for the Compile settings.
12. Click **OK** to proceed.

The program will store the current page of the log or the entire log as requested on disk in a PNG format. This file can then be opened in other graphics applications, inserted into word processing documents, etc. Note that you cannot open the PNG version of the log within LogPlot.

Export Logs as TIFF

This export tool exports the current log page or the entire log (**NEW!**) to a TIFF format.

1. Be sure the log that you wish to export is displayed in the active LogView window.
2. If you will be exporting a single page only, advance to the page you wish to export as necessary, by clicking the Page Down, Page Up, or Go To Page buttons in the View window toolbar.
3. Select the **Export** command from the View window's **File** menu.
4. Select the **TIFF** option.
5. **Filename:** Click on the Open-button  at the right edge of the prompt to enter the name to assign to the exported file, accessing other folders or drives as necessary. Click **OK** to return to the export dialog box. The program will append the appropriate file name extension (.TIF) automatically.
6. **Pixels/Inch:** In this prompt, type in the number of pixels you want per horizontal and vertical inch of the TIFF image. For display on screen, the default settings of 96 (your screen pixels per inch) should work fine.

For print output, you should enter a greater value. The resolution will affect the output file size. You might start with a resolution of 150 pixels/inch and if you find this inadequate (too "pixely" or blocky in appearance) try again at 250 or 300.

7. **Colors:** Choose from the drop-down list box the color resolution you wish to use for the output TIFF image. As you increase the color resolution, the output file will increase in size. For good color depth, you should probably choose 24 bits/pixel.
8. **Tiff Compression:** Click on the drop-down box the desired compression for your TIFF image. Packbits is default for color images.
9. **Entire Log:** *New* Insert a check here if your log occupies multiple pages and you wish to export the entire log as a single, long image. You can select the first-page header and final footer to be included in the export; the body of the log will be exported as continuous (no breaks, and no headers on intermediate pages).

Header: Choose which header to include at the top of the log - Header 1, Header 2, or No Header.

Footer: Choose which footer to include at the top of the log - Footer 1, Footer 2, or No Footer.

Scale: Select the vertical scale (number of depth units per inch or cm) for the output image. The default that is displayed will be the scale currently stored as default for the Compile settings.

10. Click **OK** to proceed.

The program will store the current page of the log on disk in a TIFF format. This file can then be opened in other graphics applications, inserted into word processing documents, etc. Note that you cannot open the TIF version of the log within LogPlot.

Export Logs as HTML

This export tool exports the log displayed in the View window to an HTML table: It captures each page of the log in a JPEG (JPG) format, and then inserts the JPG images into the HTML table. When displayed in a web browser application, the logs appear continuous.

This is a great way to share logs for display on the screen, since JPG files are small in size and HTML documents are read universally by web browsers. The only drawback to this export tool would be any viewing and (especially) printing limitations inherent to the browser you are using to open the HTML table. For example, you can't print a continuous log from the browser window even though it looks continuous on the screen.

1. Be sure the log that you wish to export is displayed in the active LogView window.
2. Select the **Export** command from the View window's **File** menu.
3. Select the **HTML Table** option.
4. **Filename:** Click on the Open-button  at the right edge of the prompt to enter the name to assign to the exported file, accessing other folders or drives as necessary. Click **OK** to return to the export dialog box. The program will append the appropriate file name extension (.HTML) automatically. The linked JPG files will be assigned a variation of the name you enter (see below).
5. Because the graphic part of the log is exported as a JPEG image, you need to establish these JPEG settings:

Compression quality: Use the slider bar to select also the compression style. Generally, the greater the compression you select (by dragging the slider bar to the left) the lesser the output quality. Because the JPEG graphic format stores information very efficiently, you might start with relatively low compression to achieve better quality.

Pixels/Inch: In this prompt, type in the number of bitmap pixels you want per horizontal and vertical inch of the JPEG image. For display on screen, the default settings of 96 (your screen pixels per inch) should work fine. Because HTML is designed primarily to be a screen-display tool for logs, we don't usually recommend higher resolution for these JPEG pages or the logs will look huge.

6. **View in browser:** Insert a check here if you want your default web browser to be launched automatically when the export is complete, and to load the log's HTML table and linked JPG files in the browser for viewing. LogPlot will launch the browser that is associated in Windows with "HTML" or "HTM" file name extensions.
7. Click **OK** to proceed.

The program will create JPG images of each page of your log, naming each the same file name as that assigned to the HTML file, followed by a "_page_1" for the first page, "_page_2" for the second, etc. It will then create an HTML file which contains a table listing the JPG image names, storing the file on disk under the name you specified.

For example, if you named your export file "ProjectA.html", and the log consists of two pages, the graphic representation of these pages would be stored in files named "ProjectA_page_1.jpg" and "ProjectA_page_2.jpg" which would be listed in the HTML table.

If requested, the HTML table will be opened into your web browser and displayed on the screen.

Please see your web browser's documentation for details about viewing and printing your logs.

! If you wish to send this exported log to a co-worker, *be sure* to send the HTML file *and* the JPG images that are linked to it, representing each page of your log.

Export Logs to ReportWorks

This export tool exports the log displayed in the View window to a bitmap or metafile for placement in a ReportWorks document. ReportWorks is a page layout tool shipped with LogPlot, which you can use to display one or more logs, with maps, titles, etc. You can export either the current log page (it uses a BMP format) or the entire log (it uses an EMF format). ReportWorks will be launched automatically and the log displayed.

This is a great way to display logs for reports and presentations, particularly if you want to include other images such as cross sections or maps from RockWorks or other programs.

1. Be sure the log that you wish to export is displayed in the active LogView window.
2. Select the **Export** command from the View window's **File** menu.
3. Select the **To ReportWorks** option.
4. **Current Page:** Select this option if the current page only is to be exported. This works well for single page logs, or for individual pages of multi-page logs.

Note that if your multi-page log has headers and footers on each page, you'll need to export each page individually by accessing the log page and selecting the **Export / to**

ReportWorks / Current Page command. It may be easier to export to HTML and then insert the individual JPG pages into the ReportWorks layout.

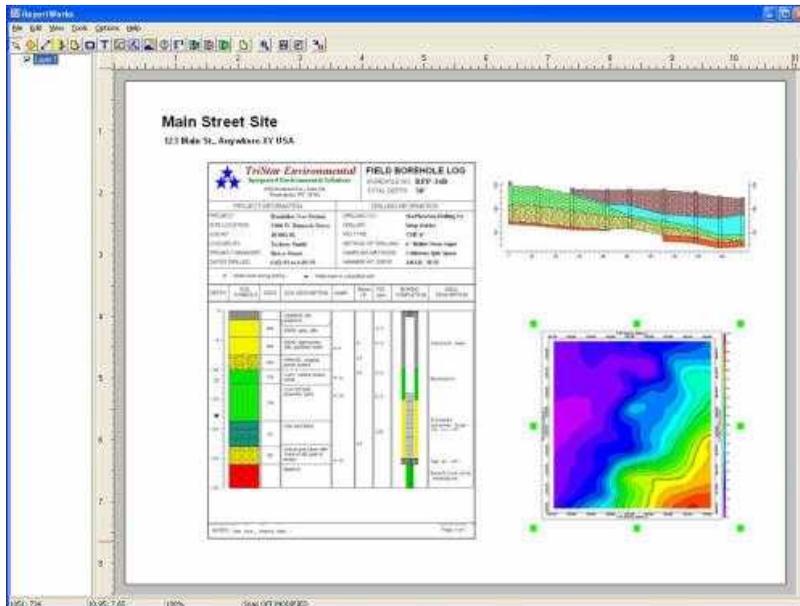
Entire Log: Select this option if the entire log is to be exported. This works well for continuous, multi-page logs. Note that if your multi-page log is not continuous (e.g. has headers/footers on each page), they will be stripped out in this export process. If you need to maintain the headers and footers, use the **Current Page** command to export each page individually (see above).

5. The program will then do the following:

- It will create a BMP image of the single page, or an EMF image of the entire log.
- It will launch the ReportWorks program and create a new document.
- It will insert the image into the ReportWorks page.

6. At this point, you can do the following:

- Resize the log image as you wish by clicking on the log image and dragging the edges or corners.
- Change the layout of the document using the ReportWorks **File / Page Setup** command.
- Double-click on the log image to adjust the scaling or add an outline border.
- Use the other ReportWorks tools to add your company name or other text, insert a logo or map image, etc.
- Save the page as a ReportWorks (RW6) document (**File / Save**).



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! Note that LogPlot creates a temporary BMP or EMF file on disk for insertion into the ReportWorks document. The image is inserted as "imbedded" so that you don't need to maintain any links from the ReportWorks document to the external BMP or EMF file. This means that the log image itself is saved in the RW6 document, and will be displayed the next time you open the RW6 file into Reportworks. You can change the link/embed status of the log image, but we recommend that you tread carefully. See the ReportWorks documentation (page 261) for more information about how it links and embeds images.

Distributing LPT Files to Your Clients

RockWare offers the LogView portion of LogPlot as a free program on CD and on the web so that your clients can view and print your original LPT files without having to purchase the entire LogPlot program. This section includes some instructions for distributing LogView and your LPT files.

Version control

First, we always recommend that you use the most recent versions of both LogPlot and LogView, available from our web site. This assures that LogPlot and LogView will "talk" well with one-another, and that you have all the newest bells and whistles.

1. For LogPlot updates, go to: <http://www.rockware.com/support/updates.html> and click on the LogPlot 7 link.
2. For LogView updates, go to: <http://www.rockware.com> and click on the Download tab. Fill in your name and email address, and click the Download Now button. Locate LogView in the next list - it's in the right-hand column (you may need to scroll down a little), in the Free Downloads section.

For both products, you need to save the downloaded file to your "temp" folder on your computer. To install either program, just double-click on the downloaded file, and the installation program will be launched.

When updating, be sure to make backup copies of any system libraries (patterns, keywords, symbols) or data files that have the same names as the factory versions so that your work won't be overwritten.

LogView is freely distributable - feel free to include its installation program in emails or on disks to clients along with completed LPT logs for their viewing and printing.

Checking the page size

When compiling your logs, remember that the page size is stored in the log design, or LDFX file. The page size is based on the current printer you have set as default, and the paper size defined for that printer. This information is used by LogPlot to know how much information can be stored on each page - both horizontally based on the printer's paper width and vertically based on the paper's height. (Even for continuous printing, LogPlot creates "pages" for easier memory management; they'll just be printed without margins on banner-supported printers.)

1. Before compiling for your client, be sure you have the same (or at minimum) similar printer paper sizes. In other words, don't compile a log for your E-sized plotter and expect them to be able to print on their letter-sized laser printer. Vertical pagination can be adjusted in LogView by them, but if your log is wider than their printer will handle, it will be clipped.

2. You can also adjust the page size in a saved LPT file by opening it into LogView using the Open with Page Dimensions option.

Linking versus Embedding

1. When designing your logs, it's a good idea to specify that any log body images are to be embedded in the LPT file rather than linked to external files. If you don't, you'll need to be sure to send the images along with LPT file(s) to the client. (Note that logos or other pictures in the log header or footer are always embedded in the LPT file.)
2. When compiling, be sure to specify that the Pattern and Symbols are to be embedded in the LPT file. If you don't, and the symbols and patterns are linked rather than embedded, the LPT files simply reference pattern numbers and symbol numbers - they don't store the actual pattern or symbol designs, and you will then need to send the pattern/symbol libraries with the log. A pain.

What to send to your client

1. Required: LPT file(s) for clients to view.
2. Optional: LogView installation program ("LogView7_Install.exe") if the customer doesn't already have it installed.
3. Optional: LogPlot pattern file (*.PAT) and/or symbol file (*.SYM) if you have not chosen to embed them in the plot (see above). (The factory tables are "rockutil.pat" and "rockutil.sym", or send other PAT/SYM files if they've been renamed.)
4. Optional: BMP or JPG or other raster images that are displayed in the log body if you have not chosen to embed them in the plot (see above).

What the client needs to do:

1. Install LogView either from a download from RockWare's web site (see above) or from the installation program supplied on CD or via email. Copy/save the LogView installation file from the web or CD to the "temp" folder on their computer, and double-click the file "LogView7_Install.exe" to install.
2. Copy/save the LPT files you've sent, from email or CD, to their hard drive before opening with LogView. They should make a new folder in which these files are saved.
3. If copied from a CD, Windows may save these files to the hard drive in a "Read-Only" state. After the client copies the files over, they should right-click on the LPT file names (in Windows Explorer or My Computer), choose Properties from the pop-up menu, and view the file's Attributes listed on the General tab. If "Read-only" is checked, the user should remove the check-mark.
4. Copy/save any accessory files that may be supplied (pattern / symbol tables, bitmaps) to the same folder as the LPT files. They may need to check the Read-only status of these files as well.
5. Start LogView, using the Start / Programs / LogView shortcut.
6. Use LogView's **File / Open** command to browse for and open the supplied LPT file(s).

It's possible that LogView will tell them, during opening, that: "The Log and Printer Page Size do not match. Do you Want to adjust the Log Page size?"

7. They should click Yes, and they'll see a window showing their computer's current printer and paper size (top of window) as well as the paper size saved in the LPT file (bottom of

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window). This warning occurs because even similar printer models may have SLIGHTLY different active paper sizes (e.g. 10.67" x 8.17" versus 10.58" x 8").

What to do next depends on several scenarios:

7a: If their paper is similar in size to the log's page size, they should just click the Set Default Size button, and then click OK. The log will be displayed on the screen at the new page size, to match their printer.

7b: If their paper is considerably smaller than the log, they should simply click OK, WITHOUT clicking Set Default Size. The program will warn them that the log is larger than their printer paper and ask "Do you want to fix?" - they should click No. The log will be displayed on the screen at full size, but if they then try to print, it may be clipped.

8. They can view the log and/or print the log (with caveats noted above). For more information about the use of LogView, they can refer to the Help / Contents menu.

Chapter 6 - Other LogPlot Tools

Editing Keywords

Editing Keywords Introduction

A keyword is a word or set of words that is used:

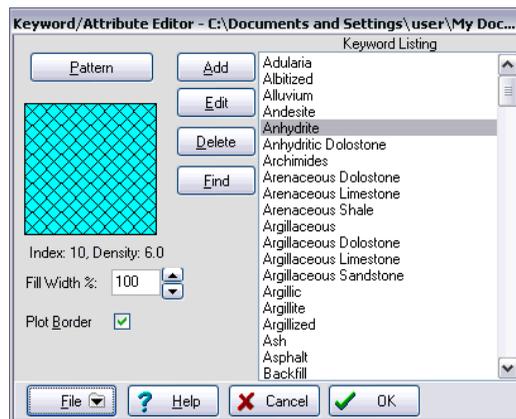
- In a Lithology tab to describe a lithologic interval. The program uses the keyword to associate the lithology with a particular pattern, which will be plotted in a Lithology Pattern column on the log. The keyword text and/or additional descriptive text can be plotted in a Lithology Description column on the log.
- In a Percent tab to describe multiple lithology intervals, for pattern representation in a Pattern Percent column.
- In a Well-Column tab to describe construction materials, for pattern representation in a Well Construction column.
- In a Fill Bar tab to describe any depth interval, for pattern display in a Fill Bar column.

The association between the keyword and the graphic pattern is done in LogPlot's "*Keyword file*". You can maintain different Keyword files for different projects. The Keyword file can be viewed, new keywords created, patterns/colors changed in the *Keyword Editor*.

Access the Keyword Editor

1. Select the Keyword Editor button  from the Data Editor or Log Design toolbar. Or, you can select the **Tools** menu's **Keyword Editor** command.

The program will display the Keyword Editor window, and it will load the default Keyword File.

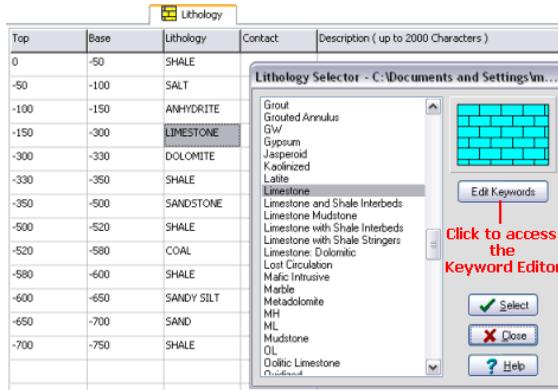


The default Keyword File is named "LogPlot.key" but you can open a different table, edit this one and save it under a new name, etc.

Access the Keyword Editor from a Lithology, Well Construction, or Fillbar tab

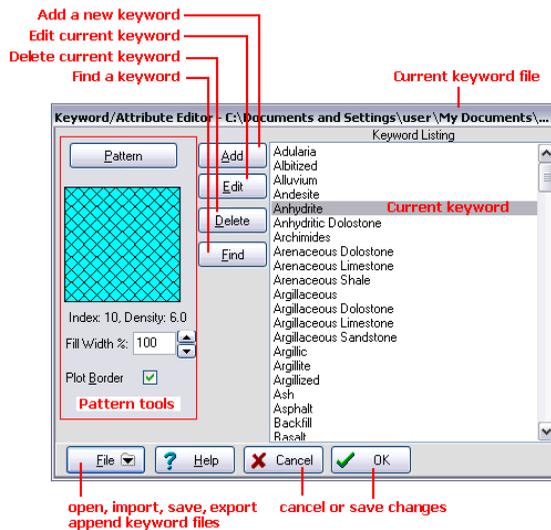
1. Access a Data Editor window.
2. Click on a Lithology tab, a Well Column tab, or a Fillbar tab, to bring it to the front.
3. Double-click in a cell in the "Lithology" column in the Lithology tab, in the "Material" column in the Well Column tab, or in the "Fill" column of the Fill Bar tab.

The program will display the Lithology Selector window, where the current keywords are displayed.



4. Click the Edit Keywords button to access the Keyword Editor.

The Keyword Editor Window



The list box on the right side of the Keyword Editor lists the keywords in the current keyword file (whose name is displayed at the top of the window). Keyword characteristics:

- Keywords may be **single** words or **multiple** words.
- Keywords may be up to **60 characters** in length, including spaces.
- Keywords will be **sorted alphabetically** within the editor.
- Keyword matching is **NOT case sensitive**. This means that an entry of "Limestone" in the data file will match with an entry of "Limestone", "LIMESTONE", or "limestone" in the keyword file.

See the LogPlot Help messages (**Help / Contents / Other LogPlot Tools / Editing Keywords**) for information about the following additional keywords topics:

- Search for keywords
- Create new keywords
- Editing keywords
- Delete keywords
- Open a different keyword file
- Save keyword changes or cancel without saving
- Save the keyword file under a new name
- Combine keyword files
- Import keyword files from RockWorks or older versions of LogPlot
- Export keywords to RockWorks
- Select Patterns for keywords

Selecting and Editing Patterns

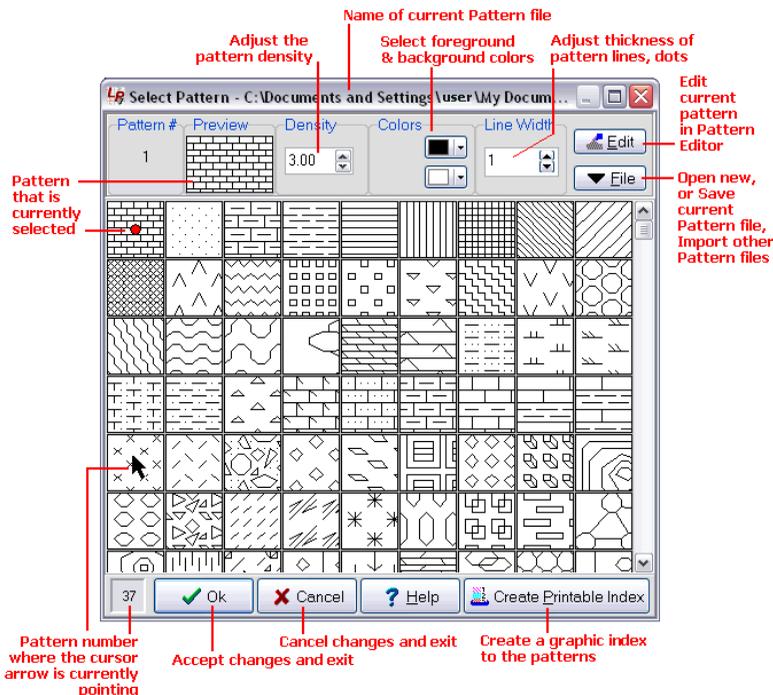
The Select Pattern Window

The Select Pattern window is displayed:

- In the Keyword Editor, when you click the Pattern button or the pattern picture
- When you select the **Tools / Pattern Editor** option.

This window is used to select the pattern's appearance for the current keyword (pattern design, density, colors, and line thickness). It is also used to manage the Pattern file (save changes, open a different file), to create a printable index of the patterns, and to access the pattern editor.

Other LogPlot Tools

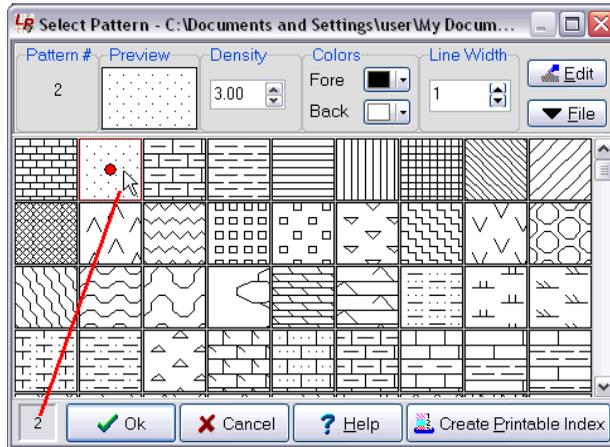


The Select Pattern window and the Pattern Editor are also accessible using the LogPlot **Tools / Pattern Editor** option.

Display the Pattern Designs

The Select Pattern window **displays all of the pattern designs** contained in the current Pattern file, whose name is listed at the top of the window.

1. To view pattern samples that are not currently visible, drag the scroll bars up or down as appropriate.
2. To view the "index number" for a pattern, simply move the pointer to that pattern sample, and see the pattern's index number shown in the reference bar at the bottom of the window.

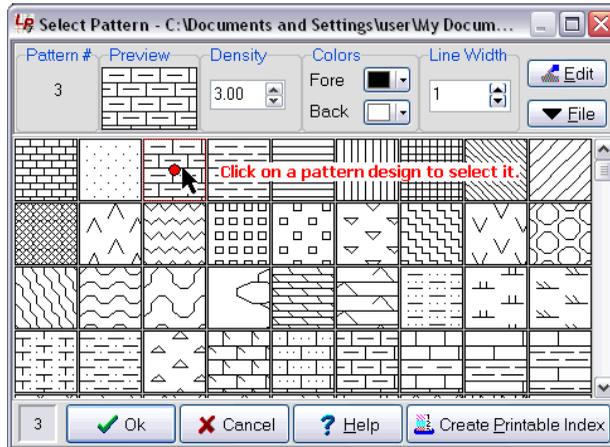


The pattern samples are always displayed as black lines on a white background, at a density of "3" and a thin line width. That's because that's how the patterns are stored in the Pattern file. The changes you make to pattern density, colors, and line thickness are all stored in the *Keyword file* and will be displayed in the upper preview only. In this way, the same "generic" pattern can be used for many keywords, with the differences in density, color, and line thickness stored with the specific keyword in the Keyword file.

Select a Pattern

The Select Pattern window lets you **select a pattern** to be associated with the current keyword.

1. Simply click on the pattern sample to be active. It will be displayed in the preview box at the top of the screen.



Other LogPlot Tools

As you make changes to this pattern's density, colors, and/or line width, these will also be reflected in the preview box.

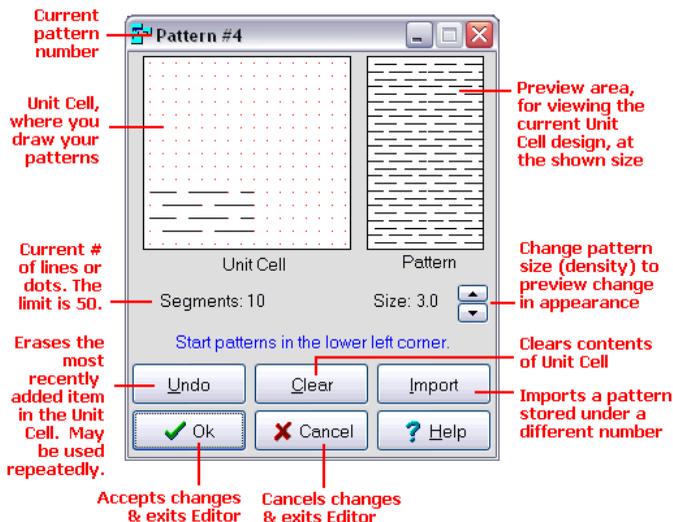
Tip: If you need to plot a particular lithology as a solid color with no pattern, simply choose a blank pattern block for that keyword (scrolling down to find one), and set the pattern's *background* color to the desired color for the lithology type.

Editing Patterns Introduction

Patterns are repeating graphic designs that can be associated with keywords in LogPlot to represent lithology type, to illustrate fossils or mineralization, and to represent materials used in well construction columns.

LogPlot is shipped with a factory library of pattern designs, stored in a "Pattern file". The default Pattern file is declared in the Options / Program Files menu.

Here's a summary of what the Pattern Editor window contains.



See the LogPlot Help messages (**Help / Contents / Other LogPlot Tools / Editing Patterns**) for these additional pattern topics:

- Adjust the pattern size or density
- Select the pattern colors
- Select the pattern line width
- Open a different Pattern file
- Save the Pattern file under a different name
- Combining Pattern files
- Create a printable pattern index
- Access the Pattern Editor
- Editing Patterns

Selecting and Editing Symbols

The Select Symbol Window

The Select Symbol window is displayed when you insert a symbol in a log design's header or footer or when you are entering data in a Symbol data tab. It's also available when you select the **Tools / Edit Symbols** menu option.

This window is used to select the symbol to be inserted, and to choose its color. In LogPlot you can choose between:

- "Vector" symbols, whose designs are created with lines drawn in the Symbol Editor, and
- "Bitmap" symbols, whose designs can be imported from small bitmap images you create in any paint-style program.

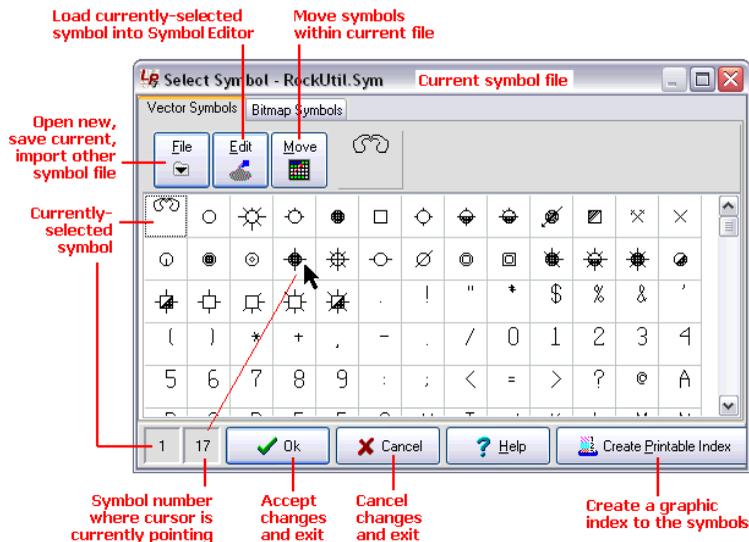
These symbol libraries are accessed by clicking on the "vector symbols" or "bitmap symbols" tabs.

Selecting Vector Symbols

The Select Symbol window is displayed when you insert a symbol in a log design's header or footer or when you are entering data in a Symbol data tab. It's also available when you select the **Tools / Edit Symbols** menu option.

To work with "vector" or line-based symbols, click on the Vector Symbols tab. (By contrast, bitmap symbols are created from BMP images.)

This window is used to select the symbol to be inserted, and to choose its color. It is also used to manage the Symbol file (save changes, open a different file), to create a printable index of the symbols, and to access the Symbol Editor.



Other LogPlot Tools

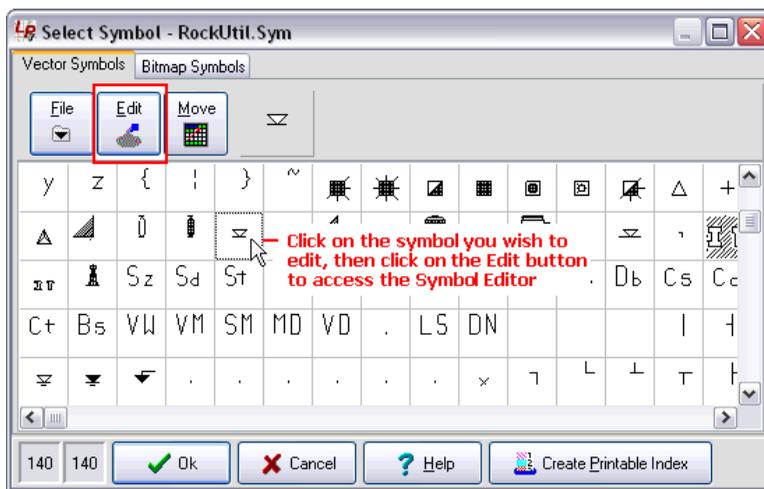
See the LogPlot Help messages (**Help / Contents / Other LogPlot tools / Editing Symbols**) for these additional topics:

- View and select vector symbols
- Move vector symbols within the current table
- Open a different vector symbol file
- Save the vector symbol file under a different name
- Combining symbol files
- Create a printable vector symbol index

Access the Vector Symbol Editor

The Select Symbol window lets you access the **Symbol Editor** where you can edit vector symbol designs or create new symbols.

1. Select a symbol that you want to edit, by clicking on its design in the listing. (You can choose a blank one.)
2. Click on the **Edit** button at the top of the Select Symbol window to edit the current symbol.



Editing Vector Symbols Introduction

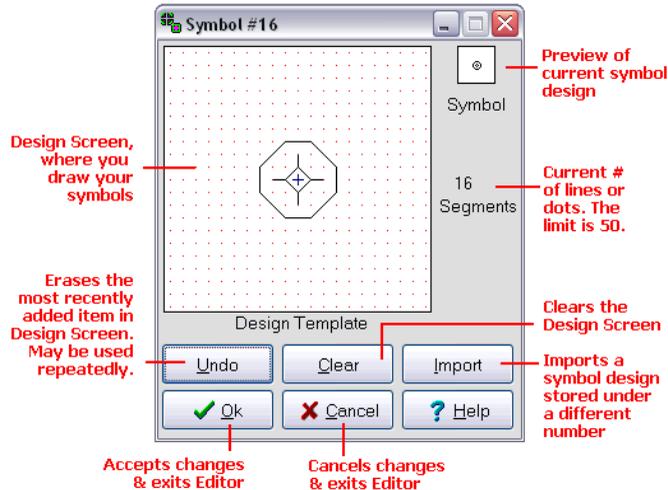
Symbols are small graphic pictures that can be plotted at user-specified depths in a LogPlot "symbol column" using the Symbol data tab, where they are often used to display water level, drill stem tests, and sampling locations down the log. Symbols can also be displayed in the log headers and footers.

LogPlot 7 supports two types of symbols:

- Vector symbols - composed of lines and dots to form the design.

- Raster symbols - imported from external BMP files.

The Symbol Editor in LogPlot is used to modify **vector symbols**. A factory library of vector symbol designs is installed with the program, stored in "Symbol file". The default vector Symbol file is declared in the **Options / Program Files** menu. LogPlot offers tools to view the current vector symbol library, edit symbol designs, create new symbols, open a different Symbol file, and more.



See the LogPlot Help messages (**Help / Contents / Other LogPlot tools / Editing Symbols**) for these additional topics:

- Access the Vector Symbol Editor
- Create New Vector Symbols
- Import Existing Vector Symbols
- Edit Existing Symbols
- Draw Vector Symbols
- Exit the symbol editor

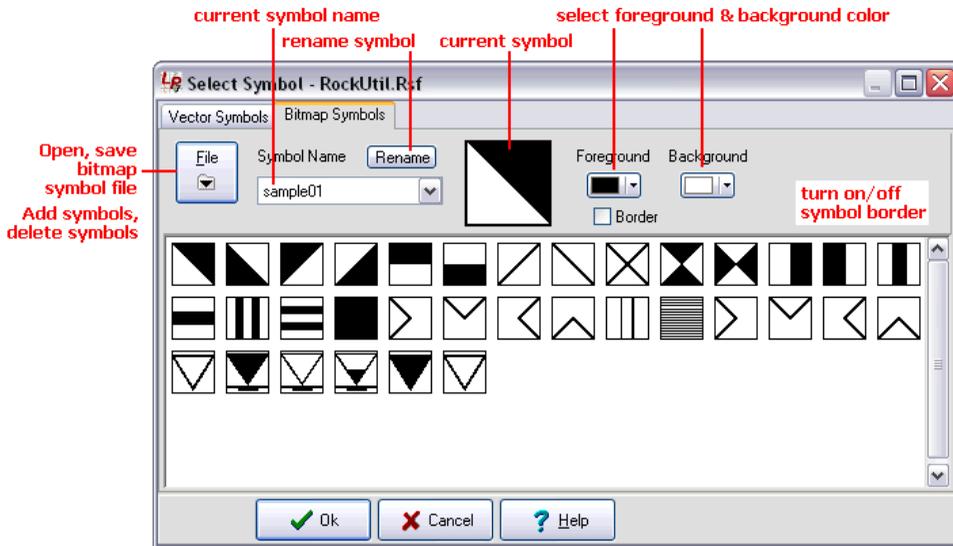
Selecting Bitmap Symbols

The Select Symbol window is displayed when you insert a symbol in a log design's header or footer or when you are entering data in a Symbol data tab. It's also available when you select the **Tools / Edit Symbols** menu option.

To work with "bitmap" or raster-based symbols, click on the Bitmap Symbols tab. (By contrast, vector symbols are created with lines within the symbol editor.)

This window is used to select the symbol to be inserted, and to choose its foreground and background colors. It is also used to manage the Symbol file (save changes, open a different file), and to import bitmap images into the library.

Other LogPlot Tools



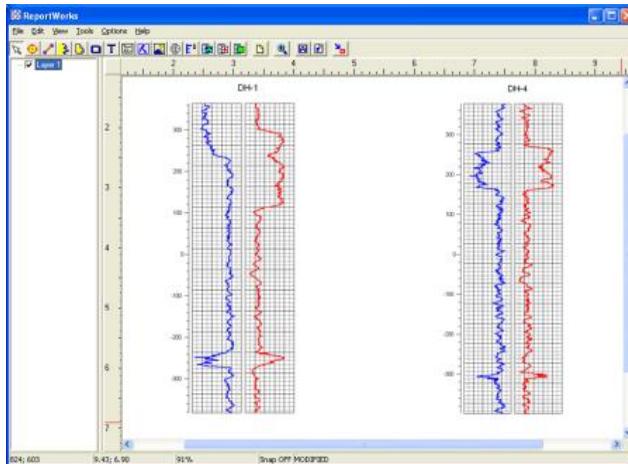
See the LogPlot Help messages (**Help / Contents / Other LogPlot tools / Editing Symbols**) for these additional topics:

- View and select raster symbols
- Select the symbol color
- Open a different symbol file
- Save the bitmap symbol file under a different name
- Import Symbol Designs
- Renaming Symbols

Chapter 7 - ReportWorks

ReportWorks Overview

The ReportWorks program is a page layout tool that's shipped with RockWorks and LogPlot. It offers tools for laying out pages with RockWorks-generated graphics, LogPlot-generated logs, imported graphics, text, shapes, and more. For LogPlot, it's a handy way to display multiple logs in cross section diagrams.



There are several ways to start up the ReportWorks program, supplied with RockWorks and LogPlot.

- **From RockWorks:** If you are at the main RockWorks program, window, click on the ReportWorks button, along the left edge of the main RockWorks program window, to open a new, blank ReportWorks window.
- **From RockPlot2D:** If you are in the RockPlot2D window, choose the File / ReportWorks command to open a new, blank ReportWorks window.
- **From LogPlot:** If you have a log displayed in the LogView window, choose the File / Export / To ReportWorks command to export a single page or the entire log to ReportWorks.
- **From Windows:** Outside the RockWorks program, you can use the Windows Start menu to locate the shortcut to the ReportWorks program in the RockWorks shortcut folder.
- **From Windows:** Outside the RockWorks program, you can use Windows Explorer to locate the program file "ReportWorks.exe" in the program folder, and double-click on it to launch the application.

Once you have a ReportWorks window displayed, you can use the **File / Page Setup** menu command to set up your new page and the **Tools** menu options to insert shapes, text, images, and more to the current page. Or, use the **File / Open** menu command to open an existing RWR file.

Managing ReportWorks Files

Creating a New ReportWorks Document (RWR File)

Use the ReportWorks **File / New** menu option to create a new page layout document.

1. With the ReportWorks program displayed on the screen, select the **File / New** option.
2. If there is an existing document already displayed and it has not been saved, the program will display a warning. Click **Yes** to save the existing document, or **No** to close the existing document without saving.

A new, blank page will be displayed on the screen.

3. Use the **File / Page Setup** option to define the page size and layout.
4. Use the **Tools** menu options to insert graphics and shapes.

Opening Existing ReportWorks Images

If there is no ReportWorks window yet displayed on the screen, you will need to create a new ReportWorks window first. (See the previous topic.)

1. To open an existing RockWorks Report "RWR" graphic file, select the **Open** command from the **File** menu. The program will display a prompt window in which you may specify the name of the file to open. ReportWorks opens files that were stored in a binary "RWR" file format only. (See the **Tools** menu for options that insert other graphic file types into the current page layout.)
2. In the displayed dialog box, select the RWR file you wish to open, accessing other drives or directories as necessary.
3. When you are ready to plot the image in a window on the screen, choose the OK button. The program will load the document into the ReportWorks window.

Note that if there are linked images in this document (RockPlot2D images; LogPlot logs; or BMP, JPG; EMF, WMF, TIF or other images) and these image files have been moved, the program will warn you that the files cannot be located. You will have the opportunity to browse for the images so that their paths can be updated.

Saving ReportWorks Documents (RWR Files)

1. Select the **File / Save As** command
2. The program will display a dialog box where you may specify the file name (and other drive and directory path information) for the page. Type in the name under which to store the plot file on disk, and click on the Save button.
3. ReportWorks always stores plot files in a binary "RW6" format. If you need to export the image to a BMP, JPG, or PNG format, you can use the Export command.

Printing ReportWorks Diagrams

You can output the image contained in a ReportWorks document to your printer using the **File / Print** command.

! It is assumed that you've already established the page layout prior to designing and printing, since the page will be printed as it's displayed in the ReportWorks screen.

1. Open an existing ReportWorks document or create a new document as necessary.
2. Double-check the page's layout using the **File / Page Setup** option.
3. To print the document, choose **File / Print**.

Your current printer's dialog box will be displayed. The options that are available will vary from depending on printer type. Typically, you would click the Properties or Options button to access your printer's settings, such as page size and orientation.

4. To send the document to the printer, click the **OK** button in the Print window.

Exporting ReportWorks Documents

The ReportWorks program saves plot files on disk in a binary "RW6" format. If you want to save the plot in a BMP (Windows Bitmap), JPG (JPEG), or PNG format you can do so with the **Export** command (**File** menu).

1. If necessary, open the RW6 file you wish to export.
2. Select the **Export** command from the **File** menu. A pop-up menu will display the export options.
3. Select the desired option.
4. Enter the requested information in the displayed program window.

File Name: Click on the small open-file button to type in the name to assign the exported file.

Color Depth: Choose from the drop-down list box the color resolution you wish to use for the output raster image. As you increase the color resolution, the output file will increase in size. For good color depth, you should probably choose 24 bits/pixel.

! Changing the pixels per inch and/or colors per pixel does not change the printable size of the graphic but instead the resolution of the image and the size on disk of the output file.

Resolution (DPI): This setting defaults to 96 and will determine the resolution of the output graphic in dots or pixels per inch. As you increase the number of dots per inch, the disk size of the output file will increase. If you want to display the image on screen only, a resolution of 96 will probably be adequate. If you want to print the image at high resolution, you should increase the resolution to at least 150 pixels per inch. (We use 200 - 300 for publication quality graphics.)

Compression: For JPG files use the sliding bar to select the compression you wish to use; for PNG files, choose Low, Medium, or High. The greater the compression, the lower the quality of the output image and the smaller the disk size of the output file. The lower the compression, the higher the quality of the output image, and the larger the disk size of the output file.

Progressive: Insert a check in this box to enable drawing of the PNG image on the screen as it is being loaded in the destination application.

Transparent: Insert a check here if you would like to choose a color in the PNG image to be transparent, and select the color by clicking in the color box.

5. Click OK when you are ready to continue.

The program will store on disk the current ReportWorks document in the selected graphic format.

View and Layout Options

Establishing the ReportWorks Page Layout

Use the **File / Print Setup** tool to establish the size and orientation of your ReportWorks page. This is an important first step in designing a report so that you know the page's dimensions.

1. Create a new document in ReportWorks, or open an existing RW6 file into the program window.
2. Select **File / Print Setup**.
3. You will see the Print Setup window for your default printer, as installed in Windows. Here you can select a different printer if necessary, and you can click the printer's Properties button to select the paper size, and portrait (vertical) or landscape (horizontal) orientation.
4. Click OK when the settings are established to your liking.

The ReportWorks page view will be updated based on the page dimensions and orientation.

If you view your page in Full Screen mode, the printable area of your paper will be shown in white, against a gray background. The printable dimensions of the sheet are determined by your printer's software, not by ReportWorks.

See the **Tools** menu options for inserting graphic images and drawing shapes. See the **Options** menu for establishing the page units.

Establishing your ReportWorks Page Units

Use the **Options / Units** menu item to set your ReportWorks page units. This will determine the units displayed in the reference rulers, as well as the default units shown in scaling options.

1. Click on the **Options** menu and then on the **Units** item.
2. From the pop-up menu, select either **Inches** or **Centimeters**. This is a "toggle" item; selecting either from the menu will establish it as default.

The program will update the reference rulers with these units. These will also become the default scaling units for subsequent RockPlot images and geo-referenced raster images that you insert.

Defining the ReportWorks Program Libraries

Use the **Options / Program Files** tool to establish the names of the pattern and symbol libraries to be used to draw patterns, symbols, pattern legends, and symbol legends inserted into the page or those that are included in inserted RockPlot graphics. Neither RockWorks nor ReportWorks stores the actual pattern and symbol designs in the drawings, but instead links

pattern and symbol numbers to a reference library; use this option to define which library to use.

(LogPlot graphics, by contrast, are inserted as exported bitmap or metafile images; these symbols and patterns are no longer linked.)

1. Select the Options / RockWare Program Files menu command.
2. Establish the file names:

Patterns: Click on the small open-file button to browse for the pattern library to be used to display patterns in RockPlot logs and cross sections, and in inserted pattern legends. If you installed RockWorks using the recommended settings, the default library will be found in: My Documents\RockWorks2006\System\RW_pat.pat. If you installed LogPlot using the recommended settings, the default library will be found in: My Documents\LogPlot 7\System\Rockutil.pat.

Symbols: Click on the small open-file button to browse for the symbol library to be used to display symbols in RockPlot maps and diagrams, and for inserted symbols and symbol legends. If you installed RockWorks using the recommended settings, the default library will be found in: My Documents\RockWorks2006\System\RW_sym.sym. If you installed LogPlot using the recommended settings, the default library will be found in: My Documents\LogPlot 7\System\Rockutil.sym.

Contour Line Vector Font: Click on the small open-file button to browse for a somewhat obscure RockWorks program file used to draw contour line labels in some diagrams. In RockWorks, this library is hard-wired to be found in the "tables" folder inside the the program folder. By default, this would be in: Program Files\RockWare\ReportWorks2006\Tables\Vfonts.tab.

3. Click **OK** to close the window.

Drawing Tools

Working with Layers

ReportWorks allows you to organize the different items on a page into different "layers". These are groups of items that can be displayed or hidden with the click of a button. For example, you might keep your static legend items (company logos, maybe a pattern index) in one layer, while document-specific RockPlot, LogPlot, or bitmap images might be kept in a separate layer.

Opening the program or creating a new ReportWorks document generates a single layer, named "Layer 1." Subsequent items that are drawn or inserted into the page are done so in that layer, until a new layer is created.

- To **add a layer** to the current document, choose the **Tools / New Layer** menu item or click on the New Layer button. The program will add a new layer entry into the data pane along the left side of the window. Be sure to highlight a particular layer prior to adding items to your document; items are always added to the currently-highlighted layer. (See also "Moving Items," below.)
- To **select a layer** to be active, simply click on its name in the data pane. Subsequent items that you add to your document will be added to that layer.

- To **rename a layer**, simply click on the layer in the data pane along the left side of the window, to highlight it. Then click on the layer's name so that you see the blinking cursor in the name's text. Edit/type in a new name. This can help you to be more specific with layer items, such as "company legend items" rather than "Layer2".
- To **move items between layers**, you need to use a cut-and-paste procedure. First, click on the layer name to which the item to be moved is currently associated. Left-click on the item to be moved to a different layer, and choose **Edit / Cut** (or type in Ctrl + X). Then, click on the name of the layer to which it is to be associated and select **Edit / Paste** (or type Ctrl + V). The item will be re-inserted into the document and associated with the specified layer.
- To **copy items between layers**, use a copy-and-paste procedure similar to that described above for moving items, but using the **Edit / Copy** command rather than the **Edit / Cut** command.
- To **display a layer's items**, insert a check-mark in the layer's check-box. To hide a layer's items from the display, remove the check-mark from the layer's name.

Inserting a Symbol into a ReportWorks Page

Use the **Tools / Symbol** menu command or toolbar button to insert a graphic symbol into an existing ReportWorks page. You can insert a symbol from the RockWare symbol library, or you can choose from some generic symbol shapes.

1. Create a new page or open an existing page as necessary.
2. Click on the Symbol toolbar button  or choose the **Tools / Symbol** menu command.
3. Use your mouse to position the cursor in the page where the symbol is to be placed, and click the left mouse button to insert it. You will see the symbol displayed on the page.
4. Double-click on the symbol to access its settings, or right-click on the symbol and choose Properties.
5. Select the symbol style, fill, outline, etc. and click Apply to enforce these settings. See the help messages for details. Click Close to close the Symbol Options window
6. Resize the symbol as you wish by clicking on one of the corner handles and dragging larger or smaller. If the Equal Scales option was selected, the horizontal-to-vertical aspect of the symbol will remain the same as you resize.
7. Reposition the symbol as you wish by clicking and holding anywhere on the symbol and dragging it to the new location

Drawing Lines, Polylines, Polygons, and Rectangles on a ReportWorks Page

Use the Reportworks **Tools** menu commands or toolbar buttons to draw straight lines, multi-segmented lines, closed polygons, and rectangles in an existing ReportWorks page. You can adjust the line style, thickness, and color, and the fill for polygons and rectangles.

1. Create a new page or open an existing page as necessary.
2. Choose your drawing tool:
Straight lines:  or choose the **Tools / Line** menu command.

Polylines:  or choose the **Tools / Polyline** menu command.

Polygons:  or choose the **Tools / Polygon** menu command.

Rectangles:  or choose the **Tools / Rectangle** menu command.

3. Draw your shape:

Line: Use your mouse to position the cursor in the page where the one endpoint of the line is to be placed, and click and hold the left mouse button to place this point. Drag the cursor to the desired location of the second endpoint, and release the mouse button.

Polyline: Use your mouse to position the cursor in the page where the first endpoint of the line is to be placed, and click and hold the left mouse button to insert it. With the button still pressed in, drag to the location of this segment's endpoint, and release the mouse button. Click and hold again, and drag to the next segment's endpoint, and release the mouse button. Continue in this manner for each polyline vertex. To end the polyline, either click on the pointer button , or double-click the left mouse button.

Polygon: Use your mouse to position the cursor in the page where the one vertex of the polygon is to be placed, and click and hold the left mouse button to insert it. With the button still pressed in, drag to the location of the next polygon vertex, and release the mouse button. You'll see a straight line connecting the points. Click and hold again, and drag to the next vertex location, and release the mouse button. Now, you'll see a closed polygon shape. Click and hold and drag again to the next vertex location, and release the mouse button. Another line segment will be added to the polygon shape. Continue in this manner for each polygon vertex. To end the polygon, either click on the pointer button , or double-click the left mouse button.

Rectangle: Use your mouse to position the cursor in the page where the one corner of the rectangle is to be placed, and click and hold the left mouse button to insert it. With the button still pressed in, drag to the location of the diagonal corner point, and release the mouse button. As you drag, you'll see a "rubber band" image of the shape's outline. Release the mouse button when the rectangle is the desired shape and size.

4. Double-click on the drawn item to view/adjust its settings, or right-click on it and choose Properties.
5. Select the line style and color, and click Apply to enforce these settings. For polygons and rectangles you can also choose a fill. See the Help messages for details. Click Close to close the shape's Options window.
6. Resize the item as you wish by clicking on one of the endpoint or vertex handles and dragging.
7. Reposition the item as you wish by clicking and holding anywhere on the item and dragging it to the new location.

Inserting Text into a ReportWorks Page

Use the **Text** or **Text Block** menu commands or toolbar buttons to insert either a single line of text or a text paragraph on an existing ReportWorks page. You can adjust the font type and size, color, and fill pattern/color.

1. Create a new page or open an existing page as necessary.

2. Choose your tool:

Click on the Text toolbar button  or choose the **Tools / Text** menu command to insert a single line of text, such as a title or label.

Click on the  button or choose **Tools / Text Block** to insert text that can wrap into multiple lines or paragraph.

3. Use your mouse to position the cursor in the page where the upper-right corner of the text label or block is to be placed, and click the left mouse button to insert it.
4. You will see the Text Options dialog box. Type in the text and select its font, outline, and background as described in the Help messages. Click Apply to apply the settings you've chosen. Click Close to close the Text Options window.
5. You can access the text options at any time by double-clicking on the text or by right-clicking and choosing Properties.
6. Reposition the text label as you wish by clicking and holding anywhere on the text and dragging it to the new location.

Inserting a RockPlot Map or Diagram (RK6 File) into a ReportWorks Page

Use the **RockPlot (RK6)** menu command or toolbar button to insert into a ReportWorks page a map, cross-section, or other 2D diagram generated by RockPlot2D and saved as a RK6 file. You can adjust the diagram's scaling, clipping, outline, and fill pattern/color. See the Bitmap tool for inserting more generic graphic images.

1. Create a new page or open an existing page as necessary.
2. Click on the RockPlot (RK6) toolbar button  or choose the **Tools / RockPlot (RK6)** menu command.
3. Use your mouse to position the cursor in the page where the one corner of the image is to be placed, and click and hold the left mouse button to insert it. With the button still pressed in, drag to the location of the diagonal corner point, and release the mouse button. As you drag, you'll see a "rubber band" image of the shape's outline.
4. The program will display the RockPlot Options dialog box.

Click on the RockPlot (RK6) tab to define the RockPlot2D image to be placed on the page and to define its scaling and settings.

File: Browse for the RK6 file to be inserted into the space you defined. You can also choose whether the RK6 file will be linked to the ReportWorks document or embedded within it.

Scaling: Choose from Best Fit (horizontal scale = vertical scale), Stretch (the image will be stretched to fill the available space) or Custom (you can define map units per inch or cm on the page).

Establish other diagram settings (clipping, margins, etc.)

Click on the Outline tab to define any outline color and line style.

Click on the Fill (Background) tab to define any color or pattern background fill for the image.

5. Click **Apply** to apply the settings you have selected. Click **Close** to close the RockPlot Options window.
6. You can access the image's options at any time by double-clicking on the image or by right-clicking and choosing **Properties**.
7. You can resize the image block by first single-clicking on the image to see the boundary "handles." Then, click and hold on any of the handles on the corners or edges and drag to the new position. Release the mouse button when the boundary's edges are in the correct position.
8. Reposition the image as you wish by clicking and holding anywhere on the text and dragging it to the new location.

Inserting a Raster Image into a ReportWorks Page

Use the Raster menu command or toolbar button to insert into a ReportWorks page a BMP, JPG, PNG, EMF, WMF, PCX, TGA or TIFF image. You can adjust the image's scaling and outline. See the RockPlot (RK6) tool for inserting RockPlot-generated graphic images, and the Georaster tool for raster images with world coordinates.

1. Create a new page or open an existing page as necessary.
 2. Create a new layer as necessary.
 3. Click on the Raster toolbar button  or choose the **Tools / Raster (BMP, JPG, TIFF)** menu command.
 4. Use your mouse to position the cursor in the page where the one corner of the image is to be placed, and click and hold the left mouse button to insert it. With the button still pressed in, drag to the location of the diagonal corner point, and release the mouse button. As you drag, you'll see a "rubber band" image of the shape's outline.
 5. The program will display the Raster Options dialog box.
- Click on the **Raster** tab to define the bitmap image to be placed on the page and to define its scaling and settings.

File: Browse for image file to be inserted into the space you defined. You can also choose whether the file will be linked to the ReportWorks document or embedded within it.

Scaling: Choose from **Best Fit** (horizontal scale = vertical scale) or **Stretch** (the image will be stretched to fill the available space).

Establish other diagram settings (margins, etc.)

Click on the **Outline** tab to define any outline color and line style.

6. Click **Apply** to apply the settings you've chosen. Click **Close** to close the Raster Options window.
7. You can access the image's options at any time by double-clicking on the image or by right-clicking and choosing **Properties**.
8. You can resize the image block by first single-clicking on the image to see the boundary "handles." Then, click and hold on any of the handles on the corners or edges and drag to the new position. Release the mouse button when the boundary's edges are in the

correct position. The raster image will be redrawn within the new boundary using the selected stretch or best-fit scaling you've selected.

9. Reposition the image as you wish by clicking and holding anywhere on the text and dragging it to the new location.

Inserting a Geo-Referenced Raster Image into a ReportWorks Page

Use the **Georaster** menu command or toolbar button to insert into a ReportWorks page a raster image that has an associated "world file" for geo-referencing its coordinates. You can adjust the image's scaling and outline. See the Raster tool for inserting generic (non-geo-referenced) raster images.

1. Create a new page or open an existing page as necessary.
2. Create a new layer as necessary.
3. Click on the Raster toolbar button  or choose the **Tools / GeoRaster** menu command.
4. Use your mouse to position the cursor in the page where the one corner of the image is to be placed, and click and hold the left mouse button to insert it. With the button still pressed in, drag to the location of the diagonal corner point, and release the mouse button. As you drag, you'll see a "rubber band" image of the shape's outline.
5. The program will display the World Options dialog box.

Click on the **Raster** tab to define the image to be placed on the page, select its world file, and define its scaling and settings.

Raster File: Browse for the BMP, JPG or TIFF file to be inserted into the space you defined.

World File: Browse for the World file associated with the raster image.

Embed/Link: Choose whether the file will be linked to the ReportWorks document or embedded within it.

Scaling: Define the number of map units per inch or cm of paper.

Establish other diagram settings (margins, etc.)

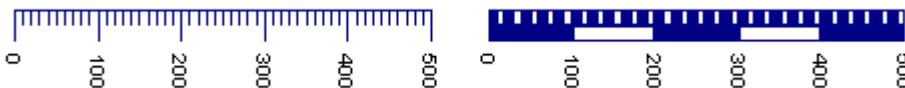
Click on the **Outline** tab to define any outline color and line style.

6. Click **Apply** to apply the settings you've chosen. Click **Close** to close the World Options window.
7. You can access the image's options at any time by double-clicking on the image or by right-clicking and choosing Properties.
8. You can resize the image block by first single-clicking on the image to see the boundary "handles." Then, click and hold on any of the handles on the corners or edges and drag to the new position. Release the mouse button when the boundary's edges are in the correct position. The raster image will be redrawn within the new boundary using the scaling you've selected.
9. Reposition the image as you wish by clicking and holding anywhere on the text and dragging it to the new location.

Inserting a Scale Bar into a ReportWorks Page

Use the **Scalebar** menu command or toolbar button to insert a scale bar on an existing ReportWorks page. You can adjust the style and scaling.

1. Create a new page or open an existing page as necessary.
2. Create a new layer as necessary.
3. Click on the Scalebar toolbar button  or choose the **Tools / Scalebar** menu command.
4. Use your mouse to position the cursor in the page where the one corner of the scale bar's rectangular area is to be placed, and click and hold the left mouse button to insert it. With the button still pressed in, drag to the location of the diagonal corner point, and release the mouse button. As you drag, you'll see a "rubber band" image of the shape's outline. You can orient the scale bar horizontally or vertically, and the orientation can be modified in the Options window. Once you release the button the scale bar will be displayed.
5. Double-click on the scale bar to access its options, or right-click and choose Properties.
6. Click on the Scalebar tab to select the scale bar's style and scaling. Choose from **Line and Tick Marks** (shown left, below) or **Filled Bars** (below, right) by clicking in the appropriate radio button. You can also select the color.



Units: Here, define the number of scale bar units to be displayed per inch or centimeter (you choose) on the page. The unit type will default to your page units, but you can change units for the scale bar. Typically, you'll be adding a scale bar to represent a map or cross section scale, and you would set the scale bar units to be equal to the map or cross section units.

Major Interval, Minor Interval: Enter here the major (label and tick) interval for the scale bar, and the minor tick interval. The examples shown above are set to a Major Interval of "100" and a Minor Interval of "10".

Position: Click on this tab to establish the text/tick position relative to the scale bar, margin size, and scalebar width and height (in your page units).

Use the **Labels** tab to select the font style, color, and size for the labels.

Use the **Outline** tab to select the outline color and style, if any.

Refer to the help messages for more details.

7. Click **Close** to close the Scalebar Options window.
8. You can resize the scale bar by first single-clicking on it to see its "handles." Then, click and hold on any of the handles on the corners or edges and drag to the new position. Release the mouse button when the rectangle edges are in the correct position. The program will automatically extend or shorten the bar and labels accordingly.
9. Reposition the entire scale bar as you wish by clicking and holding anywhere on it and dragging it to the new location.

Inserting a Pattern, Symbol, or Color Legend into a ReportWorks Page

Use the **Pattern Legend**, **Symbol Legend**, and **Color Legend** menu commands or toolbar buttons to insert an index to patterns, symbols, or colors on an existing ReportWorks page. You can specify the program table to be placed, as well as dimensions and other appearance settings.

1. Create a new page or open an existing page as necessary.
2. Create a new layer as necessary.
3. Click on the Pattern Legend  Symbol Legend , or Color Legend  toolbar button or choose the **Tools / Pattern Legend**, **Symbol Legend**, or **Color Legend** menu command.
4. Use your mouse to position the cursor in the page where the one corner of the legend's rectangular area is to be placed, and click and hold the left mouse button to insert it.
5. With the button still pressed in, drag to the location of the diagonal corner point, and release the mouse button. As you drag, you'll see a "rubber band" image of the shape's outline. You can orient the legend horizontally or vertically, and the orientation can be modified in the Options window. Once you release the button the pattern legend will be displayed.
6. Establish the requested settings.

Patterns: Stratigraphy, Lithology or Pattern Index File: Click on the Settings tab to select the project's existing Lithology table, Stratigraphy table, or Pattern Index table to be displayed in the legend. These files typically use the file name extension ".TAB." (See the RockWorks documentation for information about these files.)

! Note that these are not Pattern Libraries, with a file name extension ".PAT". Instead, these are the smaller ASCII tables that reference pattern numbers and display text labels and other information.

Symbols: Symbol Index or Symbol Range File: Click on the Settings tab to select the project's existing Symbol Index table or Symbol Range table to be displayed in the legend. These files typically use the file name extension ".TAB." (See the RockWorks documentation for information about these files.)

Colors: Color Index or Color Range File: Click on the Settings tab to select the project's existing Color Index table or Color Range table to be displayed in the legend. As above, these files typically use the file name extension ".TAB." (See the RockWorks documentation for information about these files.)

Link: Choose **Link** to have ReportWorks store only the name and path of the table being inserted, so that it reads the contents of the image from the external file location. Note that the full path of the file is stored, so that if the RW6 and image files are relocated, you'll need to re-browse for the table to re-link it. Benefits: The ReportWorks file stays smaller, and you can update the location or name of the table at any time. Drawbacks: You need to be sure to keep the linked table with the ReportWorks RW6 file so that the linking will remain intact. This can be cumbersome.

Embed: Choose **Embed** to simply store the contents of the pattern table in the ReportWorks document. Benefits: You don't have to worry about keeping the linked files available for the RW6 document. Drawbacks: The RW6 file size increases.

Appearance: These settings define how the legend will look.

Columns per row: This determines how many columns of samples there will be in the legend.

Pattern / Symbol / Color width, height: Type in a width and height, in decimal inches or centimeters, for the pattern blocks, symbol samples, or color blocks.

Horizontal margin, Vertical margin: Type in distance, in inches or centimeters, between the columns and legend edges.

Font: Click on this tab to adjust the legend's label settings.

Font settings: Use the Font, Font Style, Font Size, Color, and Effects settings to establish these Windows-standard options.

Outline Options: Click on the Outline tab in the Options window to access these settings:

Style: Click in this drop-down box to choose the line style for the legend outline, such as None for no outline, Solid for a solid outline, or Dashed for a dashed outline.

Color: Choose the outline color by clicking in the color box and making your selection.

Width: If the style is set to Solid, you can designate a line width by typing in an integer value, with 0 equaling thin lines, widening as the integer increases. Non-solid lines (dashed, dot-dashed, etc.) are set automatically to a thin width.

7. Click **Close** to close the Pattern / Symbol / Color Legend Options window.

If the wrong patterns or symbols are displayed, be sure you have the correct Pattern and/or Symbol Library specified in the ReportWorks **Options** menu (**Program Files** command).

8. You can resize the legend by first single-clicking on it to see its "handles." Then, click and hold on any of the handles on the corners or edges and drag to the new position. Release the mouse button when the rectangle edges are in the correct position.
9. Reposition the entire pattern legend as you wish by clicking and holding anywhere on it and dragging it to the new location.

ReportWorks

Notes

Chapter 8 - Reference

Program Settings

Prior to entering your data and compiling the data into a graphic log plot, you need to establish a variety of program settings so that LogPlot knows how to deal with all of your information..

- 1. To access the program settings, click on the **Options** button  or click on the **Options** menu. (Note that the program settings are also accessible from within the **Compile a Log** dialog box.)

The program will display a set of dialog boxes with stick-up index tabs.

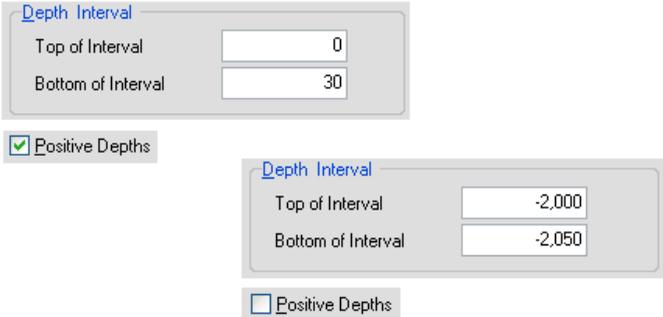
All of the settings that you can establish here are saved within the program and do not need to be changed unless your preferences change

Log Settings

Access the Log Settings by clicking on the **Options** toolbar button  and then clicking on the **Log Settings** tab. Or, you can click on the **Options** menu on the main toolbar and select **Log Settings**.

Confirm starting and ending depths for the log

Top of Interval, Base of Interval: These settings, displayed in the Top-Bottom Settings window (**Log / Compile a Log**), determine the depth at the top and at the base of the log to be created. The defaults that are displayed are read from the active data file's Setup tab.



You may type in different depths if you wish to plot a subset of the data. The program will omit any data that is not within the range you specify here.

If your data is entered as positive depths, be sure that the **Positive Depths** check-box (in the Scaling section) is checked.

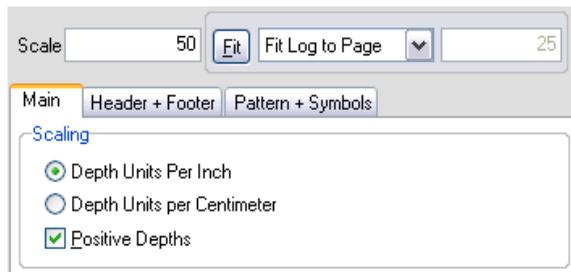
Select the Log Design (LDFX) File

Log Design File: This setting, on the Main tab of the **Compile a Log**, **Compile All Logs** and **Log Settings** windows, determines the log design into which the data will be compiled to become the graphic log(s). The default name displayed in this prompt is that of the current log design, displayed in the Log Design window.

If you want to use a different log design for your log, click on the button to the right of the file name to browse for a different log design file (LDFX) to use for compiling. The file you select will now be default, and will be displayed as default the next time you access the Log Design window.

Set the Vertical Scale

Scaling: This setting, on the Main tab of the **Compile a Log**, **Compile All Logs**, and **Log Settings** window, is used to define how many depth units will be displayed per vertical inch or centimeter of the log. In other words, it defines how compact or expanded the log will be.

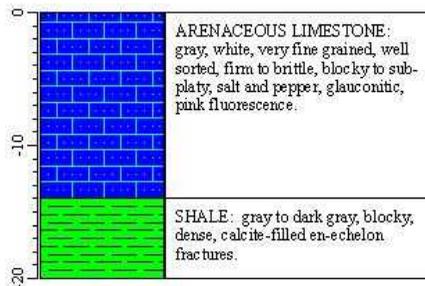


1. First, choose your desired output units by clicking in the appropriate radio button. You can select either **Depth units per inch** or **Depth units per Centimeter**.
2. Next, you have several scaling options:

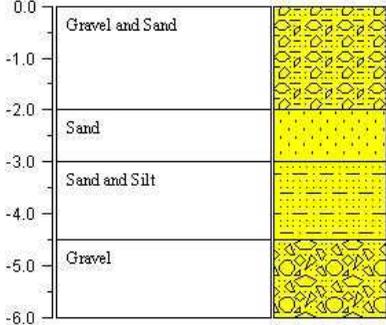
Option 1 - Scale: If you know exactly how many depth units you want plotted per inch or centimeter on the plotted log, just type that value into the Scale prompt.



For example, if your log data's entered in feet and you've selected **Depth Units per Inch**, and you type in "10" for the scale, then LogPlot will compile the data so that 10 feet are represented in each inch of your output log.



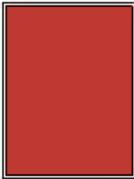
If your data is entered in meters, you've selected *Depth Units per Centimeter*, and you type in "1" for the scale, then LogPlot will compile the data so that 1 meter is represented in each centimeter on the output log.



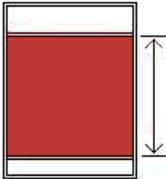
Option 2 - Fit / Fit Log to Page: If you don't need a specific scale but just want LogPlot to fit all of the data within the Top and Bottom of Interval (at top of window) in the available space on a single page, select the *Fit Log to Page* option from the drop-down box, and then click the *Fit* button.



LogPlot will determine how much data will fit in how much space and update the scale displayed in the prompt box.



LogPlot reads page size and printable area from your printer driver (settings visible in File / Page + Printer Setup)



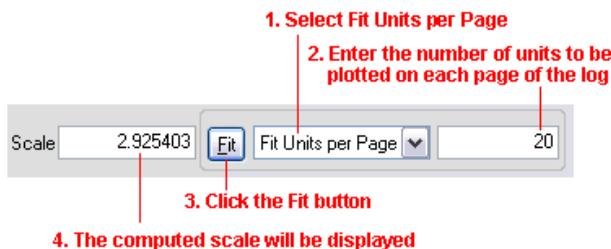
Header & footer size are read from the log design, and header/footer margin from the Compile window, to determine available space for your data.

$$\text{Scale to fit on page} = \frac{\text{Printable length of page}}{\text{Top of interval - Base of interval}}$$

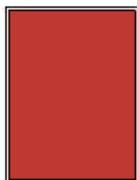
! If you make any adjustments to the Header/Footer settings, if you adjust the printer or page size, be sure to click the **Fit** button again so that LogPlot updates the calculation.

! **Fit Log to Page** is not available if you are compiling multiple logs since the depth range of the different data files may vary.

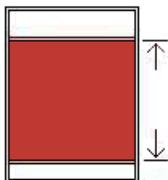
Option 3 - Fit / Fit Units per Page: If you like to plot a specific number of depth units per page on your log, select the **Fit Units per Page** option from the drop-down box, and then click the **Fit** button.



LogPlot will determine how much space is available on the page and the scale that will result in the defined number of units within that space. It will update the scale displayed in the prompt box.



LogPlot reads page size and printable area from your printer driver (settings visible in File / Page + Printer Setup)



Header & footer size are read from the log design, and header/footer margin from the Compile window, to determine available space for your data.

$$\text{Scale to fit Units on page} = \frac{\text{Printable length of page}}{\text{\# units requested/page}}$$

! If you make any adjustments to the Header/Footer settings, if you adjust the printer or page size, be sure to click the **Fit** button again so that LogPlot updates the calculation.

! LogPlot will determine the scale based on the available space on the first page of your log.

3. **Positive Depths:** Insert a check in this box if your data are entered as positive depths (e.g. values increasing as you proceed down the drill-hole).

Top	Base	Lithology	De
0	-5	GARNET SKARN	
-5	-10	PYROXENE	
-10	-15	TREMOLITE	
-15	-20	negative depths FELS	
-20	-25	TREMOLITE HORNFELS	
-25	-30	PYROXENE HORNFELS	
-30	-35	QUARTZ VEINING	
-35	-40	TREMOLITE MARBLE	

Top	Base	Lithology	De
0	5	GARNET SKARN	
5	10	PYROXENE	
10	15	TREMOLITE	
15	20	positive depths FELS	
20	25	TREMOLITE HORNFELS	
25	30	PYROXENE HORNFELS	
30	35	QUARTZ VEINING	
35	40	TREMOLITE MARBLE	

Set the Starting Page Number

Starting Page Number: This setting, on the Main tab of the **Compile a Log**, **Compile All Logs**, and **Log Settings** windows, is used to define the page number for the first page of the log(s) being compiled. Type into this prompt the page number for the first page of your log.

For most logs, this will be set to "1." However, here are some possible exceptions:

- If you are plotting a log subset to be inserted into a larger report, you might set the starting page to a larger number to fit into an existing page sequence.
- If you are including a Report with the log, you might set the starting page to "0" so that the first main log page is numbered "1".

Establish Header and Footer Settings

These settings are found on the **Header + Footer** tab of the **Compile a Log**, **Compile All Logs**, and **Log Settings** windows.

Margin

1. **Margin between Header/Footer and Log Body:** Type in the space that to be inserted between the header and footer and the log body in the compiled log. It is expressed in either inches or centimeters, depending on the units you have established for the **Scale** setting. If no margin is desired, enter 0.

Page Settings

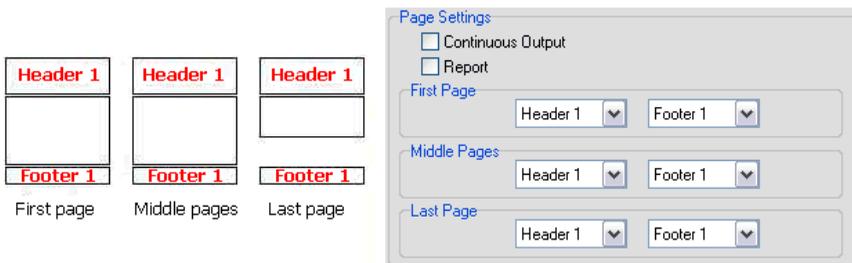
1. **Continuous Output:** Insert a check here if you do not want a header and footer to be plotted on each page of your log (e.g. a continuous log). Leave this box blank if you do want a header and footer to be plotted on each page of the log (e.g. single-sheet log). for continuous logs, you can select only a header for the first page, and a footer for the last page.
2. **Report:** Insert a check here if your log design contains a Report header that is to be plotted before the remaining log pages.
3. **First Page:** Use the drop-down boxes to choose which header and footer to plot on page 1 of the log.

Reference

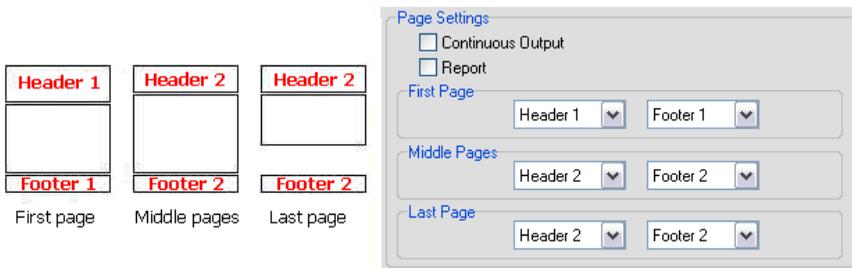
- 4. **Middle Pages:** Choose which header and footer to plot on the middle pages of the log, if any. If you will be plotting a continuous log, indicated with the check-mark above, these will be ignored.
- 5. **Last Page:** Choose which header and footer to plot on the final page of the log.

Some examples:

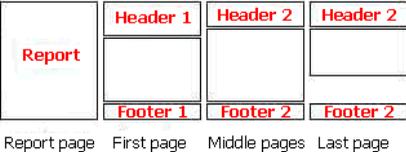
Single-sheet log: If you want a header and footer on each page, to achieve single-sheet logs, remove the check-mark from the **Continuous Output** box. If there is only one header and footer in the log's design, specify those for all pages.



If you have created a distinct Header 2 and/or Footer 2, you can specify those in any combination.



If you have created a report header, insert a check in the **Report** check-box, and it will be plotted before the first log page.



Page Settings

Continuous Output
 Report

First Page: Header 1, Footer 1

Middle Pages: Header 2, Footer 2

Last Page: Header 2, Footer 2

Continuous log: If you are printing on continuous paper or simply wish to omit headers and footers from intermediate pages, insert a check-mark in the **Continuous Output** box. You can then select a header for the first page and a footer for the last page only.



Page Settings

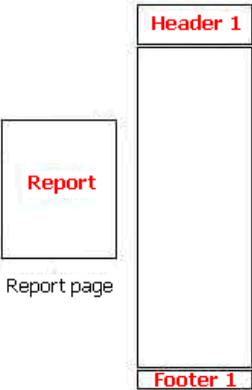
Continuous Output
 Report

First Page: Header 1, Footer 1

Middle Pages: Header 2, Footer 2

Last Page: Header 2, Footer 1

Continuous logs can contain a Report sheet by checking the **Report** box.



Page Settings

Continuous Output
 Report

First Page: Header 1, Footer 1

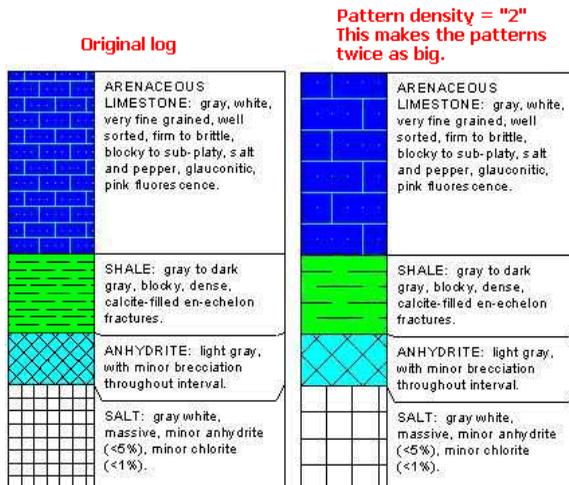
Middle Pages: Header 2, Footer 2

Last Page: Header 2, Footer 1

Establish Pattern and Symbol Settings

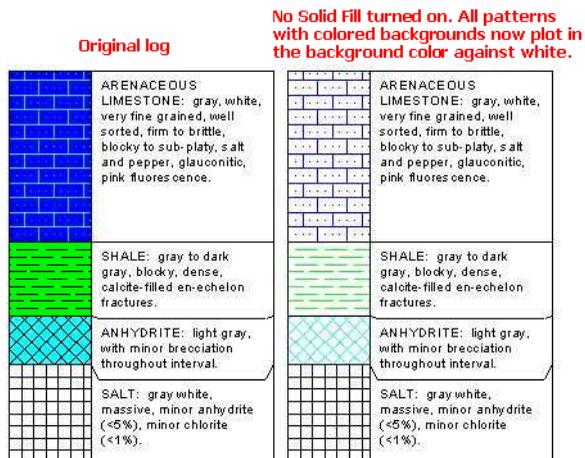
These settings are located on the Pattern + Symbols tab in the **Compile a Log**, **Compile All Logs**, and **Log Settings** windows.

1. **Pattern Density Factor:** A value of "1" will keep all lithologic patterns at their original densities. A value of "2" will make the patterns appear twice as big (half as dense). A value of "0.5" will make the patterns half as big (twice as dense). You may enter any real number value in this prompt, as it is used as a "multiplier" for the original pattern densities.



The pattern density change will affect Lithology Pattern columns, Pattern Percent columns, and Well Construction columns in the body of the log, and Header/Footer Pattern blocks.

2. **No Solid Fill Patterns:** If activated, any patterns defined with a non-white background color will be changed at compile time - they will display with the background color as the foreground color, against a white background.



3. **Embed Patterns and Symbols in compiled log:** This option is used to store the pattern and symbol designs in the graphic log's LPT file rather than linking them to the program's pattern and symbol libraries. By turning this option on, which is default, it makes sharing logs much easier, because other users won't have to access your original libraries in order to view the proper pattern and symbol designs when they view the graphic log.

System Settings

Access the System Settings by clicking on the **Options** toolbar button  and then clicking on the **System Settings** tab. Or, you can click on the **Options** menu in the program toolbar and select **System Settings**.

1. **Skip Intro Screen:** Insert a check-mark in this box to disable the display of the initial "Welcome to LogPlot" screen on program startup.
2. **Show tutorial on program start:** Insert a check-mark in this box if you want the program tutorial to be opened and displayed on the screen each time the program is started. To turn off the automatic launching of the tutorial screen, remove the check-mark.

Note that the tutorial can also be accessed at any time from LogPlot's **Help** menu (**Tutorial** command).

3. **Prompt to save modified LPT files:** Insert a check-mark in this box if you want to be prompted to save untitled log plot displays before closing or exiting the LogView window. Disabling this reminder means that the program will permit you to close a View window without saving, thus "throwing away" any graphic log displayed within it.

! We do not recommend disabling this setting.

4. **Create a Log Designer preview:** Insert a check-mark in this box if you want the Log Designer window to create a JPG preview of Log Design Files (LDF) when they are saved. This can be helpful the next time you go to open a log design, since its preview can be

Reference

displayed, helping you to confirm you're opening the intended file. Remove this check-mark to disable this automatic preview creation. The preview files are saved in the same folder as the LDF files, with a naming convention *filename.preview.jpg* where *filename* is the name of the LDF file.

5. **Show Log Design Preview:** If you have requested that Log Designer create JPG previews, insert a check here to have these previews displayed when you browse to open a log design.
6. **Show Hints:** If this setting is checked, the program will display small explanations or hints about program buttons when you position the pointer over them. Hints are also displayed in the File Manager pane, when you point the cursor at file names, displaying date, size.
7. **Allow Data Tabs to be Dragged:** If this setting is checked, you can click on the stick-up tabs in the data editor window and drag the tabs to a new location. If left unchecked, this ability is turned off.
8. **Data Auto Template:** When the LogPlot is started up, it always loads the most recently used log design as default. It also starts with a new, untitled data file in the Data Editor window. By default, the untitled startup data file will be populated with a complete set of data tabs to match the default log design. If you turn off the **Data Auto Template**, the program will initialize the untitled startup data file with only a "Setup" data tab. We recommend leaving this setting turned on, though experienced users may wish to deactivate it since they may already have existing DAT files to work with, or their own, preferred data template.
9. **Check for Updates:** Insert a check here to have LogPlot look for an updated revision on the RockWare web site each time the program is started up, and to display a message if an update is found. Successful search for updates requires an internet connection.
10. **Allow Log Design Undo:** Check this box to enable the "undo" feature within the Log Design window, whereby incremental behind-the-scenes saves of your design are created, allowing you to step backward through editing changes. Use the up/down arrows to select how many undo steps are to be allowed.
11. **Accept Reversed Lithology Depth Intervals:** This setting can be handy if you are creating measured sections, and your lithologic information is entered into the Lithology tab in reversed order. Typically, LogPlot requires that all data be entered from the top of the diagram downward, for example, from an elevation of 3000 to 2500. This setting, if activated, permits you to enter your lithology data instead from elevation 2500 to 3000. Insert a check-mark in this box if the data you have entered into the Lithology data tab has been entered in reverse order, from the bottom of the log to the top. If activated, LogPlot will simply internally reverse the order of the lithology data.

! This setting affects Lithology tab data only.
12. **Break descriptions on space:** This setting, by default activated, would need to be changed only if you are entering descriptions using a language character set that does not separate words with spaces.

If activated (with a check-mark), LogPlot will wrap the text in a lithologic description column or a text column so that the line breaks occur at the spaces between words.

If deactivated (no check-mark) LogPlot will wrap the text at any character location based on available space.

Program Files Settings

The Program Files tab is accessible by clicking on the Options toolbar button and then clicking on the Program Files tab. Or, you can select the Program Files command in the LogPlot Options menu.

This tab is used to select the name of the Keyword, Pattern, and Symbol files to be used in the program. LogPlot permits you to maintain different copies of these files, for use with different data sets or in different project areas. For example, for a geotechnical soil boring log you might wish to use the USCS keyword and pattern library that are shipped with the program. For a water well, you may wish to use the USGS keyword and pattern tables.

Many users find it handy to keep active keyword, pattern, and/or symbol files right within the directory in which their data files are stored, so that all project data can be kept together.

! You can also select the name of the active file from within the Keyword Editor, the Select Pattern window, and the Select Symbol window. Any file name changes you make in those program windows will be reflected in the **Program Files** tab when it is next displayed.

Factory default settings:

Keyword file: "LogPlot.key"

Pattern file: "rockutil.pat"

Vector Symbol file: "rockutil.sym"

Raster Symbol file: "rockutil.rsf"

All of these files are installed into your "My Documents\LogPlot 7\System" folder.

How to...

Select a different Keyword Table

1. To change the name of the keyword file to be used in the program, click on the open-file button  to the right of the Keyword File name prompt.
2. In the displayed window, locate the name of the file to be loaded, accessing other drives or directories as necessary. Be sure the keyword file has the extension ".KEY." This process can be used to open keyword files created in LogPlot2005, LogPlot2003, LogPlot2001, and LogPlot2003.

! If you wish to open a keyword file from LogPlot v.1, 97, 98, and RockWorks, these files must be *imported* rather than opened, because of format differences. See **Help / Contents / Other LogPlot Tools / Keyword Editor** for details.
3. Select the desired file name by clicking on it.
4. Click the **Open** button to accept the selected file name. Or, click on **Cancel** to throw out any changes.

You will be returned to the **Program Files** tab with the new file name displayed as default. You may repeat this process as necessary to change other file names.

The program will now use this keyword table when reading your lithology, percent, and well construction data and determining the patterns and colors to be used to represent them in the log.

Select a different Pattern Table

Reference

1. To change the name of the pattern file to be used in the program, click on the open-file button  to the right of the name's prompt.
2. In the displayed window, locate the name of the file to be loaded, accessing other drives or directories as necessary. Be sure the pattern file has the extension ".PAT."

The pattern files that you select can be created in LogPlot (all versions) or RockWorks99 and newer.
3. Select the desired file name by clicking on it.
4. Click the **Open** button to accept the selected file name. Or, click on **Cancel** to throw out any changes.

You will be returned to the **Program Files** tab with the new file name displayed as default. You may repeat this process as necessary to change other file names.

The program will now use this pattern table when displaying patterns in the Keyword Editor and in compiled logs.

Select a different vector Symbol Table

LogPlot now supports both vector symbols, composed of lines and dots, as well as raster symbols - small bitmap pictures.

1. To change the name of the **vector** symbol file to be used in the program, click on the open-file button  to the right of the **Vector Symbol File** name's prompt.
2. In the displayed window, locate the name of the file to be loaded, accessing other drives or directories as necessary. Be sure the symbol file has the extension ".SYM."

The symbol files that you select can be created in LogPlot (all versions) or RockWorks99 and newer.
3. Select the desired file name by clicking on it.
4. Click the **Open** button to accept the selected file name. Or, click on **Cancel** to throw out any changes.

You will be returned to the **Program Files** tab with the new file name displayed as default. You may repeat this process as necessary to change other file names.

The program will now use the selected symbol table when displaying vector symbols in the compiled logs.

Select a different raster Symbol Table

Raster symbols are bitmap pictures of symbols rather than symbols comprised of lines and dots (see vector symbols).

1. To change the name of the raster symbol file to be used in the program, click on the open-file button  to the right of the **Raster Symbol File** name's prompt.
2. In the displayed window, locate the name of the file to be loaded, accessing other drives or directories as necessary. Be sure the symbol file has the extension ".RSF."
3. Select the desired file name by clicking on it.

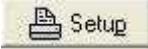
4. Click the **Open** button to accept the selected file name. Or, click on **Cancel** to throw out any changes.

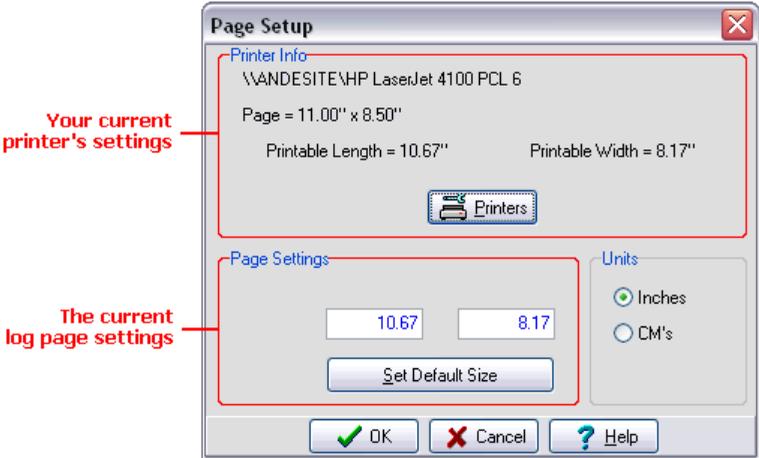
You will be returned to the **Program Files** tab with the new file name displayed as default. You may repeat this process as necessary to change other file names.

The program will now use the selected symbol table when displaying raster symbols in the compiled logs.

Establish Printer Settings

Using the **Page + Print Setup** command, you can establish a default printer and page size, which the Log Designer window uses to dimension the active design area and which LogPlot will use not only in printing, but also in laying out your log pages on the screen.

Page + Print Setup can be accessed from the Data Editor or Log Designer **File** menu, or using the **Setup** button  from any of the **Settings** dialog boxes.



At the top of the displayed window you will see a summary of the current printer information: the printer name, the current paper size, the printable area on that paper for that printer.

In the bottom portion of the dialog box, you will see the current length and width dimensions for your log page. If any of the dimensions are shown in red, then they exceed the available dimensions for the page as shown at the top of the window.

1. Verify printer name, paper size, paper format (e.g. single-sheet or banner), paper orientation: Click on the **Printers** button to see a standard Windows Print Setup dialog box where you can establish these settings. Typically you can press the Properties button to access the printer's suite of options.
2. Click **OK** (probably several times) to return to LogPlot's Page Setup window.
3. Back in the LogPlot Page Setup window, verify that the printer, paper size, and printable length and width have been updated in the Printer Info portion of the window.

! If you want to print a continuous log, be sure the Printable Length equals the paper length (e.g. no margins). The paper length can be as short as 11" for continuous printing as long as there are no top and bottom margins and the full length of each page will be used.

4. Update the LogPlot page size based on the current printer settings: Click the **Set Default Size** button.
5. If you wish to change the units from inches to centimeters or vice versa, click the appropriate radio button. This will update the Printer Info (top) automatically. Be sure to click the **Set Default Size** button again to re-compute the new Log Designer page size. These units will also be reflected in the ruler at the top of the Log Designer window.
6. When the printer and page settings are established to your satisfaction, click **OK** to return to the Settings window.

! Any changes you make here will also be recorded in the Log Designer window and stored with the current LDFX file.

See also:

Setting the Log's Page Size (page 27) for more information about log pages.

Your Windows documentation for information about installing printer drivers, and see your printer's documentation regarding specific printer settings.

Compiling, Display Tips

Errors During Compiling

If there is a syntax error within your data file, the compilation process (**Log / Compile a Log** or **Compile All** commands) will halt, the program will display a message box, and it will display the tab in which the error has occurred. The exact contents of the message box will vary depending on the type of error.

Check the required format for the data tab(s). (See LogPlot Data Format, page 148.)

When you have made the necessary corrections, try compiling again.

! **Note** that you do not need to save the data file prior to recompiling - LogPlot will read the data directly from the Editor window. Don't forget to save the changes you make, however, prior to quitting the program or closing the data file!

Missing Lithologic Patterns

If your log compiles successfully, but you are missing pattern blocks for some lithologic intervals, there's probably a "keyword" problem. Check the following:

- Be sure that the keyword you used for that interval is declared in the Keyword Editor. Click on the Lithology tab containing the keywords. Double-click on the keyword for the missing interval. If that keyword is not displayed in the Lithology Selector window, click the Edit Keywords button and add the keyword to the list. See the instructions under Editing Keywords. The Keyword Editor can also be accessed directly from the **Tools / Edit Keywords** option.
- Be sure that the keyword file (KEY) and pattern file (PAT) that the program should use are correctly defined using the Options / Program Files command.

- Be sure there are not duplicate keywords in the current keyword file, which can result from appending keyword files or from simple oversight. When searching for keyword matches, LogPlot will use the first keyword it finds in the keyword file and ignore any additional, identical entries.

If you are missing **ALL** of the lithologic patterns, it's probably a "name" problem.

- Access the Log Designer window and double-check that the item whose patterns are missing has the same name as the data tab containing the keyword and depth intervals. For example, if the patterns are missing from a Lithology Pattern column, check that column's name in the log design against the Lithology data tab's name in the data editor. Or, you might want to access the Data Editor window and use its **Data / Check Data Against Log Design** option, which will give you a report of which items in the current LDF and DAT files don't match.

Partial Fills for Lithologic Patterns

If, in a lithologic pattern column, a pattern is filling only part of the column, check the "Fill " setting for that interval's keyword in the Keyword Editor. If set to a value less than "100," the pattern will not fill the entire pattern column.

Pattern fills less than "100" can be used to illustrate eroded strata.

Incorrect Lithologic Patterns

If you see incorrect lithologic patterns displayed in the Lithology Pattern, Pattern Percent, or Fillbar columns on the log body, check that you have the correct keyword file and pattern file specified in **Options / Program Files**. LogPlot needs to know which library of keywords and patterns to use when making the match between your data keywords and the graphic patterns to be plotted in the log.

If you see incorrect lithologic patterns displayed in the header/footer pattern blocks, then the program is probably using the wrong pattern file. Since these pattern blocks are not tied to keywords and are inserted right into the log design, they specify a pattern index number only. If the pattern file is not embedded in the LPT file and if you are using a different pattern library than the person who created the log design, that index number might display a different graphic pattern. For this reason, it's a good idea to compile by embedding the pattern file. Or, just be sure to note in the comment area of the data file's Setup tab the correct pattern file name to use with the data file and its design.

Crowded Lithologic Descriptions

If your lithologic description text appears crowded, try the following:

- * Increase the width of the description column and/or decrease the size of the column's font in the Log Designer, save your changes, and try compiling again in LogPlot.
- * Log Designer also offers a "description offset" feature for Lithologic Description columns; if activated, the program will move conflicting descriptions downward or upward.
- * Log Designer contains a Lithology Description tool for disabling the plotting of the extended description should there not be enough space. This allows plotting of short keywords only, saving lots of space.
- * Recompile the log at a less compressed scale to give each interval more room. To make the scale less compressed, enter a lesser value in the **Scale** prompt in order to plot fewer

log units per inch (or cm) of output. The vertical scale settings can be set right in the **Log / Compile a Log** window, or In the **Options / Log Settings** window.

- * If the font established in the log design is not available on the current computer at compile time or during re-opening in LogView, LogPlot will substitute the first available True Type font that it finds on the system. If this is unacceptable, update your font suite or change the log design.

Incorrectly Positioned or Formatted Log Components

The log's design is created within the Log Designer screen, which you can access by clicking on the Log Designer tab in the LogPlot window. The "active" log design will be loaded automatically. Check and modify the design entities as necessary, and resave the log design (LDFX) file. To access any item's settings in the Designer window, just double-click on the item in the design screen, or find it in the **Edit / View Entity List** display and click **Load Item**.

! You must re-save the log design file before trying to recompile the log within LogPlot, as the design entities are read from the saved file on disk.

Blank Log Components

There can be several explanations of why no data may appear within certain columns in a log design.

- * If you have less data than is declared for the log design you are using, then those log entities will simply be left blank.

Example: If your data file contains only lithologic descriptions while the log design also includes curve and bar graph columns, those columns will be left blank on the compiled log.

- * An item in the compiled log will also be left blank if its data is flagged with a different name.

Example: If the data in the Curve tab in your data file is named "Drilling Rate" while the corresponding curve column on the log's design is named "Drill Rate," the program will not be able to match the data to the log column. You'll need to edit the name in either the data file or the log's design.

Use the **Data / Check Data against Log Design** tool to show you a list of discrepancies between the data file and the log design.

- * If no data is being displayed at all in the compiled log, check the Top / Bottom Settings that you have declared for the compiled log, being sure they include the range of the data in the data file.

Example: If the depth at the log top and log bottom displayed and accepted in the **Compile** dialog box are "0" and "-100", respectively, yet your actual data starts at -2500 and extends to -3000, the program will not plot any data in the compiled log. Be sure the **Top / Bottom** settings are inclusive of the actual data.

- * If no data is being displayed at all in the compiled log, check also: If your depths are entered as negative values, you must be sure the **Positive Depths** box is not checked. This is displayed in the Options / Log Settings dialog, and also in the Compile a Log window. If your depths are entered as positive values, be sure the **Positive Depths** box is checked.

Edit-Text Problems

If your Edit-Text items in the log header or footer are being cut off, remember that there is a 60-character limit, and the fields do not wrap onto a lower line. If you need a two-line entry, you need to create two separate Edit-Text items, with different names. Or, you can use the Static Notes or Edit Notes items for multi-line paragraphs.

Printing Tips

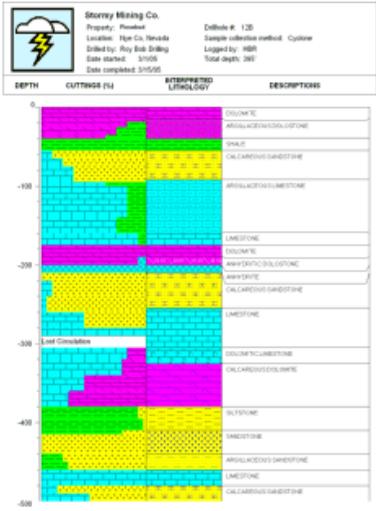
Epson Tips

To print continuous logs using the Epson Stylus 1500 & 1520:

1. Access the Log Designer window by clicking the Log Designer tab in the main program window.
2. Select the **File / Page + Printer Setup** option in the Log Designer window.
3. Select the Epson Stylus 1500 (or 1520) printer driver from the list of available printers.
Note: This assumes that the Epson-supplied Windows driver has already been installed on your computer.
4. Do not select the paper size, source, or orientation from the initial Print Setup menu.
5. Instead, select the **Properties** button from the Print Setup menu. This will load the Epson-supplied printer driver menu.
6. Click on the **Paper** tab from the Epson Stylus 1500/1520 menu.
7. Locate the **Paper Source** setting within the Paper tab. Select the **Manual Feed Slot (Banner)** option from within the **Paper Source** pull-down menu.
8. Locate the **Paper Size** button within the **Paper** menu. Select the **Long Paper 17x 11 in** option from within the **Paper Size** menu.
9. Click **OK** to close the Epson setup window, to return to the LogPlot Print Setup window.
10. Double-check the upper part of the Print Setup window. It should show your printer name, the printer's page size (now reading something like: Page = 11.00 " x 16.54") and the printable area on the paper (now reading something like: Printable Length = 11", Printable Width = 13.60").
! What's important here is that the Printable Length matches the page's physical length – this means that the printer is telling LogPlot to include no top or bottom margins on the page, thus to fill the entire page or to compile as a continuous log.
If you don't see that the Printable Length is equaling the Page Length, then go back to #7 and be sure that it's set to **Manual Feed Slot (Banner)** and repeat steps 8 – 10.
11. Now, check the lower half of this window, where the log's page size is set. Click the Set Default Size button to set the log's page size to the full printable length and width shown in the Printer Info section.
12. Click **OK** in the Print Setup window to return to Log Designer.
13. The program will prompt you whether you want to save the changes made – click Yes.
14. Compile your data into the log design.

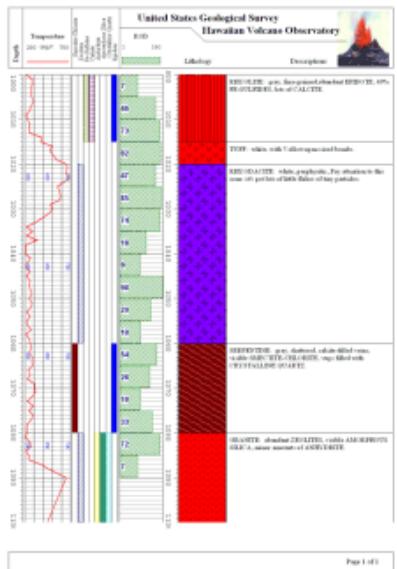
Left: Lithology3.dat Lithology3.lidx Lithology with descriptions and cuttings

Right: USCS.dat USCS.lidx Simple reference log displaying some USCS soil classifications



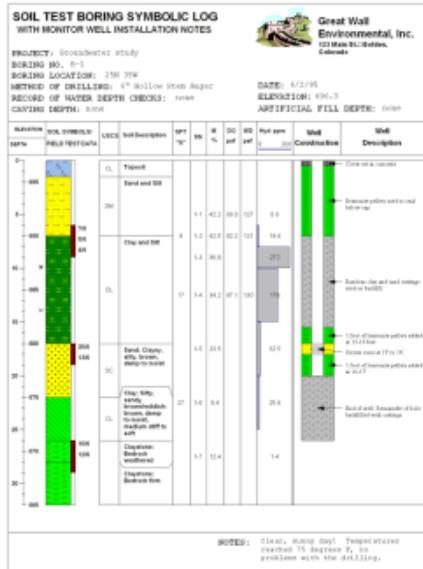
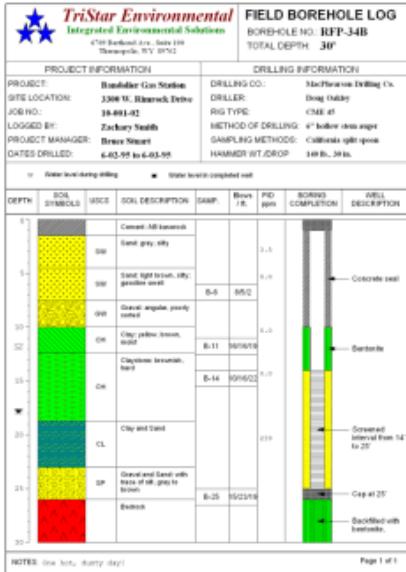
Major Divisions	Patterns	Code	Description	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravels or gravel-sand mixtures, little or no fines	
	CLEAN GRAVELS (GW or G)	GP	Poorly graded gravels or gravel-sand mixtures, little or no fines	
	More than half of coarse fraction is larger than No. 20 sieve	GM	Silty gravels, gravel-sand-silt mixtures	
SAND AND SANDY SOILS	CLEAN SANDS (SW or S)	SW	Well-graded sands or gravelly sands, little or no fines	
	More than half of material is smaller than No. 40 sieve	SP	Poorly graded sands or gravelly sands, little or no fines	
	More than half of coarse fraction is smaller than No. 40 sieve	SM	Silty sands, sand-silt mixtures	
FINE GRAINED SOILS	SANDS WITH FINES (intermediate amount of fines)	SC	Clayey sands, sand-clay mixtures	
	SILTS AND CLAYS	LIQVITABLE (less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity
		LIQVITABLE (greater than 50)	CL	Inorganic clays of low to medium plasticity
HIGHLY ORGANIC SOILS	SILTS AND CLAYS	OL	Organic silts and organic silt-clays of low plasticity	
		OE	Inorganic silts, micaceous or bituminous fine sandy or silty soils, elastic silts	
	LIQVITABLE (greater than 50)	CI	Inorganic clays of high plasticity, fat clays	
		CE	Organic clays of medium to high plasticity, organic silts	
		OT	Peat and other highly organic soils	

Volcano1.dat Volcano1.lidx Volcano log



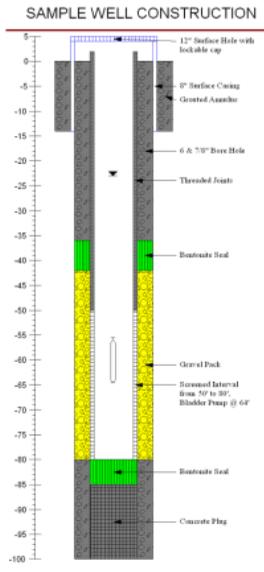
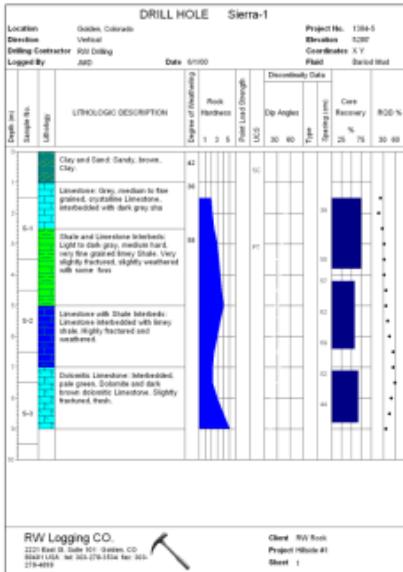
Left: Enviro-geotech5.dat Enviro-geotech5.lfdx Lithology, soils, boring completion

Right: Enviro-geotech6.dat Enviro-geotech6.lfdx Lithology, soils, well construction



Left: Enviro-geotech7.dat Enviro-geotech7.lfdx Lithology, strength, dip, RQD

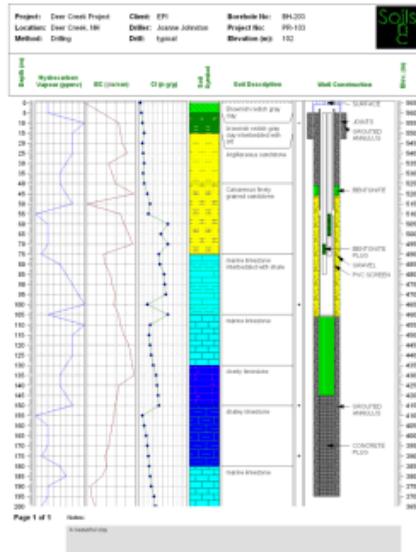
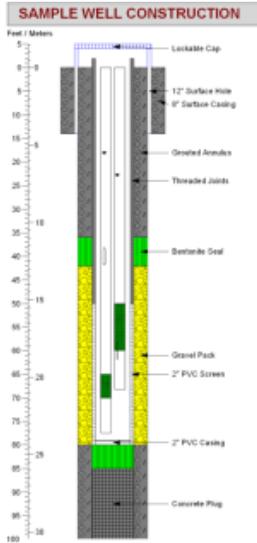
Right: Enviro-geotech8.dat Enviro-geotech8.lfdx Simple well construction



Reference

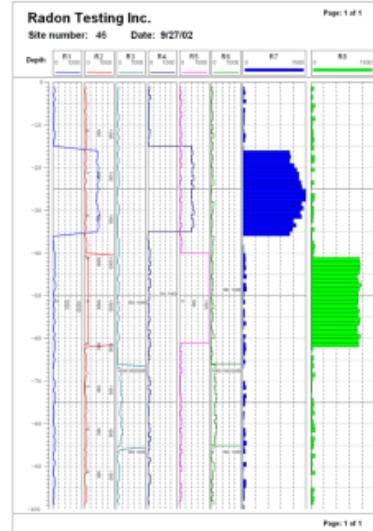
Left: Enviro-geotech9.dat Enviro-geotech9.lidx Well construction with 2 borings

Right: Enviro-geotech10.dat Enviro-geotech10.lidx Lithology, hydrocarbons, well constr.



Left: Penn-DOT.dat Penn-DOT.lidx PA DOT geotechnical log

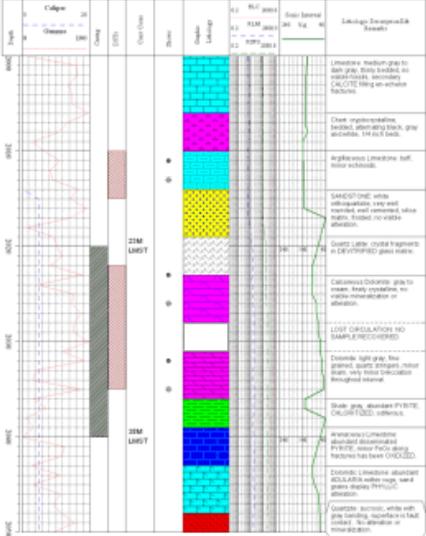
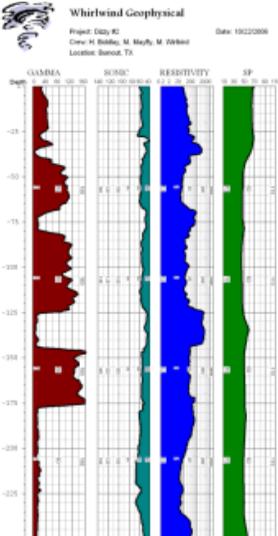
Right: Radon.dat Radon.lidx Radon testing log with curves and bar graphs



Geophysical log designs

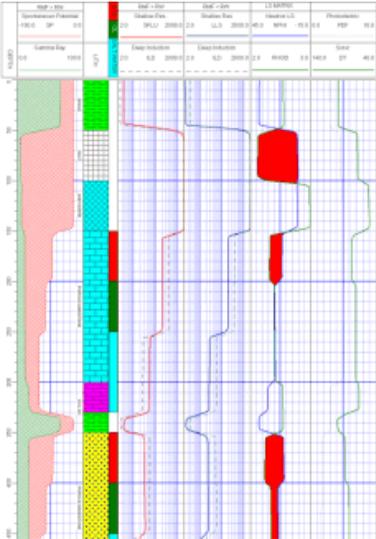
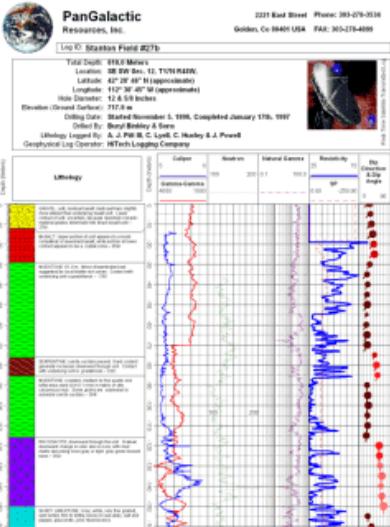
Left: Geophysical1.dat Geophysical1.lfdx Gamma, resistivity, sonic log (curves)

Right: Geophysical2.dat Geophysical2.lfdx Lithology, caliper, resistivity, sonic (curves)



Left: Geophysical3.dat Geophysical3.lfdx Lithology, caliper, e-log curves

Right: Geophysical4.dat Geophysical4.lfdx Lithology, 10 e-log curves

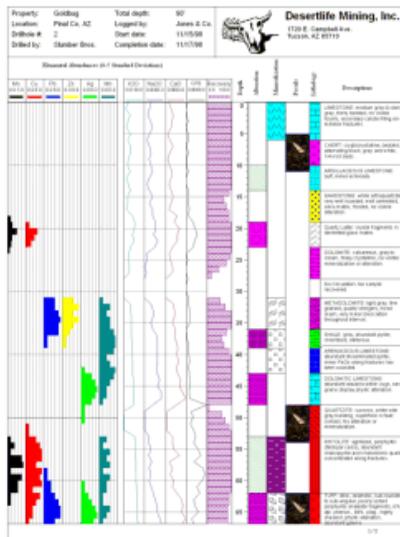
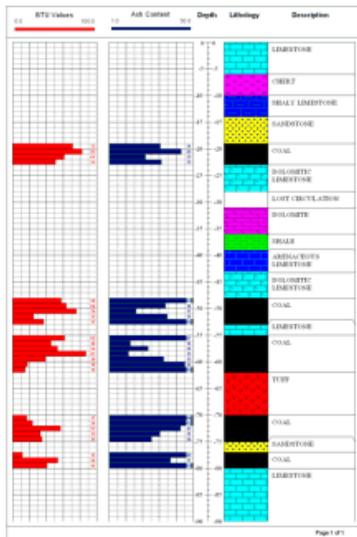


Reference

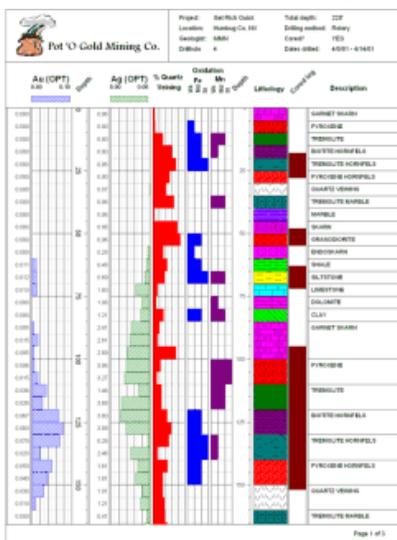
Mining log designs

Left: Mining1.dat Mining1.lfdx Coal log with lithology, BTU and ash bar graphs.

Right: Mining2.dat Mining2.lfdx Minerals with elemental abundances, lith., mineralization

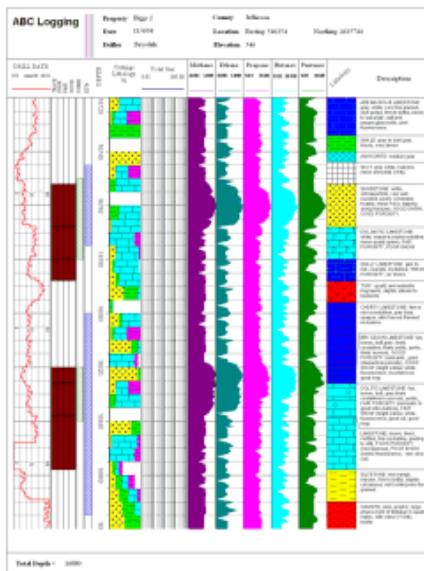


Mining3.dat Mining3.lfdx Minerals exploration with ore grades.



Mudlog Designs

Mudlog1.dat Mudlog1.lfx Lithology, 5 gas curves, drill rate, cuttings



Installed Files and File Types

LogPlot Program Files

These program files are typically installed into the \Program Files\RockWare\LogPlot 7 folder:

contacting RockWare.htm	information about contacting RockWare
installation.htm	information about the installation program
License.htm	Lists the terms of the RockWare license agreement
LogPlot7.exe	LogPlot 7 program
LogPlot7.inf	Revisions list
LogPlot7_Licensing.exe	LogPlot 7 licensing program
LP7_INSTALL.LOG	Installation log
lpintro.gif	Splash screen images
Readme.txt	Additional documentation
Rock.err	Reference list of program error messages

Reference

These program files are typically installed into the \Program Files\RockWare\Help folder:

LogPlot7.chm	LogPlot Help file, with tutorial
LogView7.chm	LogView Help file
ReportWorks.chm	ReportWorks Help file

These program files are typically installed into or created in the \My Documents\LogPlot 7\System folder (the original versions are stored in \Program Files\RockWare\LogPlot 7\System). Note that the exact path may differ if you are using Windows Vista.

LogPlot7.log	program execution log
LogPlot 7.ini	configuration settings
LogPlot.key	Large, generic keyword library
LP_deutch.key	German keyword list
LP_espanol.key	Spanish keyword list
LP_francais.key	French keyword list
LP_italiano.key	Italian keyword list
Rockutil.pat	Large, generic pattern library
Rockutil.sym	Large, generic vectory symbol table
Rockutil.rsf	Large, generic raster symbol library
USCS1.key	USCS-specific keyword library
USCS1.pat	USCS-specific pattern library
USCS2.key	USCS-specific keyword library
USCS2.pat	USCS-specific pattern library
USGSlithos1.key	USGS keyword library
USGSlithos2.key	USGS keyword library, with numeric codes
USGSlithos.pat	USGS-specific pattern library

LogPlot 7 File Types:

.DAT - data files (text) Samples are installed in the "\My Documents\LogPlot 7\Samples" folder.

.LDFX - LogDesign files (ASCII XML format). Samples are installed in the "\My Documents\LogPlot 7\Samples" folder.

.PREVIEW.JPG - LogDesign preview files (binary JPEG format). Created by LogDesign automatically. Previews can be turned on/off in Options / System Settings.

.ENM - LogDesign entity type and name file (text). Created by LogDesign automatically.

.LPT – LogView files (binary proprietary format). Can also be read by free LogView program available on RockWare's web site.

Sample Files:

sample batch.txt Sample batch file.

Sample.las Sample LAS import file.

See also:

Sample Log Designs and Data Files (page 292) for a listing of the DAT and LDFX files that are shipped with LogPlot.

Command Line Execution**Running LogPlot with Command Line Parameters**

LogPlot supports command line processing and command line batch file processing. The implications of this range from simple loading of a data file upon program launch, to automatic display of the data file and establishment of program settings and/or compiling of data files and display of a log.

These command line tools are used for a single data file only.

! See also Compiling a Log Batch (page 229) if you wish to compile multiple data files, within the program itself, using menu settings.

Option 1: Load a Data File at Program Startup

If you want a particular data file to be loaded when LogPlot is started, simply list the name of the LogPlot data file (.DAT), including its full path, after the program name on the command line.

For example, to start up LogPlot and load the data file named "project_a.dat", you would use the following command line:

```
LogPlot7.exe c:\data\project_a\project_a.dat
```

If there are any space characters in the path, such as for the directory "Documents and Settings," be sure to enclose the information in quotation marks:

```
LogPlot7.exe "C:\Documents and Settings\user\My Documents\data\DH-01.dat"
```

Option 2: Load a Data File and Establish Settings at Program Startup

If you want to automate the steps of starting the LogPlot program, automatically loading a particular data file AND establishing a number of program settings, you can do so by creating a "batch" file. This file contains a list of batch commands that declare file names and program settings to be honored when the program starts.

To process a batch file when the LogPlot program is started, you list the "BATCH=" command and then the name of the LogPlot Batch file after the program name on the command line.

```
LogPlot7.exe "BATCH=C:\Documents and Settings\user\My
Documents\data\batch_a.txt"
```

Option 3: Load a Data File, Establish Settings at Program Startup, AND Compile and Display the Log

If you want to automate the steps of starting the LogPlot program, automatically loading a particular data file and establishing a number of program settings, AND then compiling the data and displaying the log, this is also done by creating a "batch" file. This file contains a list of batch commands that declare file names and program settings to be honored upon program startup.

The difference between this batch and that in Option 2, above, is that this file contains the "DISPLAY" command.

To process a batch file when the LogPlot program is started, you list the "BATCH=" command and then the name of the LogPlot Batch file after the program name on the command line.

```
LogPlot7.exe "BATCH=C:\Documents and Settings\user\My  
Documents\data\batch_a.txt"
```

See the program Help messages (**Help / Contents / Reference**) for details about the batch file requirements and structure.

Data Format

Data Format - Text Only

LogPlot 7 stores log data in ASCII (text only) ".DAT" files. Much of the structure or "command syntax" of these files is invisible to the user because of the Data Editor, which loads the blocks of information into data "tabs."

We include this information here so that if you are familiar with the program and wish to construct the data files in another application, you will know the required structure for each data block in order to compile the log (using a command line batch) or to load the data into the Data Editor's data tabs.

Please see **Help / Contents / Reference / Data Format** for details.

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