

Version 9.0 Addendum Manual

Wellsight Edition



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Overview

We have completely **revamped the Annotations**. We now have a true Rich Text field that can be completely customized with respect to fonts, font color, background font color, bullets. Line size styles with heads and tails. You are now able to copy previously done descriptions and paste them into a new position on the log.

We have added an **MDT Layer and Report** to show the location and test number for multiple a Modular Dynamic Test tool as well as a report to show the data.

We have added an **MDT Import Utility** window to import MDT data directly into our MDT Table fields and retain the mapping for subsequent imports.

We have added a **Dip Meter and Hole Dip layers** to represent the dips (angle and inclination) estimated from any of your common Imaging tools.

We have added a **Dip Meter and Hole Dip Import Utility** window to import Dip Meter data (bedding, fracturing etc.) MDT data directly into our MDT Table fields and retain the mapping for subsequent imports.

We have added a **Casing Data layer** to display the casing shoe with the casing size and landed depth information from the casing report information..

We have added a **Multi Array Curve layer** to display the logging tool information that have multiple channels such as induction and sonic tools.

We have added an **LAS Unwrap Utility** which will remake a wrapped LAS file and make it into an unwrapped file which then Power*Suite can then import utilizing the LAS import utility.

We have added a **retro look (soft or hard edges) to Porosity Grade, Grain size, Grain size Matrix, Carbonate texture, Carbonate texture Matrix and Generic Percent** tracks to give the log a look very similar to the way it appeared when the Lithology logs were hand drafted.

System Options Window: We have added the ability to Change the **Depth Font** style and orientation in the track as well as the default Annotation Font Type, size and style. We have also reordered the System options into a tab dialogue window so that the choices are more easily found. The **grain size and carbonate texture fill pattern** can now be modified with a pattern and a foreground and background color elections.

We have added the ability to print the **track header** for a striplog on both the **top and bottom** of a log to more resemble the wire line log output. The bottom footer prints out the last scale applicable for the curves being drawn. We have also added a new abbreviated title page for Sample Logs to go along with our normal Striplog and Corelog Header.

We have made it much **simpler to add sample descriptions** to the **morning report** and we have added the ability to add your **striplog descriptions** to your **Morning report**.

We have added the ability to change the **Bit Record Font**, style size and color to be editable by the user and can be used as defaults for subsequent logs.

We have added the ability to change the **Directional Survey Font**, style size and color to be editable by the user and can be used as defaults for subsequent logs.

We have added the ability to change the **Formation Tops and Ages Font**, style size and color to be editable by the user and can be used as defaults for subsequent logs.

We have added the ability to change the **Track Header Font**, style size and color to be editable by the user and can be used as defaults for subsequent logs.

We have added the ability to change the **Layer Header Font**, style size and color to be editable by the user and can be used as defaults for subsequent logs.

We have increased the functionality of the **Interpretive Lithology Layer.** We have added the ability to double click a lithology or no data interval between two drawn beds. We have also added the ability to

draw multiple interbedded lithologies including grain sizes on your log without having to redo all the original parameters.

We have added the ability to **delete multiple Rock Accessories**, Sedimentary structures, Trace Fossils, Diagenesis and Fractures by Holding the CTRL Key and drawing a box around the ones you wish to delete.

We have revised the **Core Header Display**: We have expanded the information entered into the remarks field of this window. This will enable the user to put in any information they wish. The printed Core header is now dynamic and can change is size with the text that has been added.

We have revised the Well Record table input window with the Casing Coordinates.

We have revised the **Well Formation** table so the user can display either Sample / Log / or Prognosis tops for a particular formation to your striplog.

We have revised **Bit Record table** to retain the pump data and calculates the flow area as well as allow the user to enter as many nozzles as they like. We have also added some dull characteristics for the PDC bits and their grading system.

We have added a **sorting ability for our Generic categories** so the user can change from our standard of ordered alphabetically to any order they wish to see for their generic category listings.

We have revised the **Undo controls**: The Undo selection allows the user to undo any or all of the striplog manipulations, with respect to the layer functionalities, performed on the striplog. This will now also apply to all annotations done on the log as well. We have also added an Undo button on the toolbar.

We have revised the **Redo controls**: The Redo selection allows the user to redo any or all of the striplog manipulations, with respect to the layer functionalities, performed on the striplog. This will now also apply to all annotations done on the log as well. We have also added a Redo button on the toolbar.

Added to the Sample / Core Description Window an option to **Transfer the Top Depth Only** to the Strip / Core Log

We have revised the **Bit Record window** to a tab dialogue window to better organize the data. We know also remember the Pump data from one bit record to another. We also allow the user to enter as many nozzles as they have and the application will calculate the total flow area for those nozzles.

We have completely revised the **Layer Configuration Window** to better organize the data and added more fields to accommodate the Dip meter display.

We have added the ability to print the Striplog Header, Legend and Formation tops to a Tabloid paper format with both Landscape and Portrait page orientations.

Import Dip Meter Data	7
Overview of the window.	8
Importing / Mapping of Dip Meter data.	9
How to Import Dip Meter Data with an Existing mapping file.	10
Import Modular Dynamic Tester (MDT) Data	12
Overview of the window.	13
Importing / Mapping of MDT data.	14
How to Import MDT Data with an Existing mapping file.	15
Print Log- File Pull down menu	17
Undo – Edit pull down menu item	19
Redo – Edit pull down menu item	19
Well Window – Edit pull down menu item	20
Core / Sample Header – Edit pull down menu item	21
How to Edit a Core / Sample Header	21
Well Record Data portion of the Core / Sample Header window	22
How to Delete a Core / Sample Header	22
Layer Configuration - Edit pull down menu item	23
How to Edit a Layer Configuration Window	24
Display Settings Tab	24
How to Display a different Wells data on a layer of an Existing Log from another UWI or	
well.	26
Curve Definitions Tab	27
How to select a different Curve to display on a Curve layer	28
How to change the Curve Attributes (Curve and Units, Null Value and Remarks)	28
Layer Scales Tab	29
Data Group ID's Tab	30
Annotation Group Button	31
Generic Category Button	31
MDT Run Number Button	31
Directional Survey Button	31
Graphics Button	32
Detailed Lithology Group Button	32
Dip Meter Group Button	32
How to select a different Group to display on a layer	32
Formation Age Display Tab	32
Dip Meter Definitions Tab	33
Delete Generic Groups	35
Generic Group Sorting – Edit pull down menu item	35
How to sort a Generic Group List	35
Toolbar – View pull down menu item	36
Import Toolbar – View pull down menu item	37
Export Toolbar – View pull down menu item	37
RTF Font Toolbar – View pull down menu item	37
RTF Line and Boxes Toolbar – View pull down menu item	38
Sample Description – Reports pull down menu item	38
Adding a Sample Description	39
Editing a Sample Description	40
Deleting a Sample Description	40
Core Descriptions	42
Adding a Core Description	43
Editing a Core Description	43
Deleting a Core Description	43
Bit Record	45

Adding a Bit Record	45
Bit Records Tab	45
Pump Data Tab	46
Drilling Parameters Tab	47
Bit Grading Tab	47
Editing a Bit Record	48
Deleting a Bit Record	48
Aligning All Bit Records	48
Formation	51
Adding a Formation Top	51
Editing a Formation Top	51
Deleting a Formation Top	52
Morning Report	56
Adding a Morning Report	56
Editing a Morning Report	56
Deleting a Morning Report	56
Lithology Summary	57
Adding a Lithology Summary	58
Editing a Lithology Summary	58
Deleting a Lithology Summary	58
Transferring a Sample Description	59
Transferring Lithology Descriptions from the Striplog	60
Gas Summary	61
Adding a Gas Summary	62
Editing a Gas Summary	62
Deleting a Gas Summary	62
MDT Report Window – Reports pull down menu item	63
Adding a MDT Run	63
Editing a MDT Run	63
Deleting a MDT Run	63
MDT Data Window	64
Adding an MDT record manually	64
Editing MDT Data	65
Deleting MDT Data	65
Sample / Core Description Transfer - Options pull down menu Item	67
Transferring one Sample Description	68
Transferring Multiple Sample Descriptions	68
Transferring Core Descriptions	69
Transferring a Single Core Description	69
Transferring Multiple Core Descriptions	70
How to unwrap a wrapped LAS file format	72
System Options - Options pull down menu Item	73
How to Set your Fonts	75
How to Change the Rock Favorites Selection	79
How to Change the Accessory Favorites Selection	80
How to Change the Diagenesis Favorites Selection	80
How to Change the % Lithology Sort Order	81
How to Change the Sedimentary Favorites Selection	82
How to Change the Fractures Favorites Selection	82
How to Change the Trace Fossil Favorites Selection	83
Grain Size Layer	84
Grain Size Matrix Layer	88
Porosity Grade Layer	93
How to Change the Porosity Grade Scale and grid pattern	95
Interpreted Lithology Layer - Rock Type Builder	96
Overview of Rock type builder window	96

Drafting an Interpreted Lithology Interval	97
Drafting an Interpreted Lithology Interval with Interbedding.	98
How to Draw with an already drawn Interbedded Interval.	99
Deleting the Interbedded portion of an Interpreted Lithology Interval.	100
Drafting a Lithology Interval with Lost Core, No Sample or Overburden	100
Inserting Thin beds	101
Resizing an Existing Rock Type or Bed	101
Deleting an Existing Rock Type or Bed	101
Interpreted Lithology Layer - Rock Accessory Builder	102
Drawing Accessories	102
Drawing an Internal Bedding Contact	103
Moving a Thinbed, Components, Internal Contact, Matrix, or Cement	104
Deleting a single Thin bed, Components, Internal Contact, Matrix, or Cement	104
Deleting Multiple Thin beds, Components, Internal Contacts, Matrix, or Cements	104
Annotation Builder	106
Overview of RTF Font Toolbar buttons.	106
Overview of RTF Lines and Boxes Toolbar buttons.	107
Adding Annotations / Lithology Descriptions	107
Drawing a Line	108
How to Draw a line in the Annotations / Lithology Descriptions	108
Editing Annotations/Lithology Descriptions	108
Resizing Annotations/Lithology Descriptions	109
Moving Annotations/Lithology Descriptions	109
Deleting Annotations/Lithology Descriptions	109
Using the List functionality to copy, move to and delete annotations.	109
Globally Change the Annotation Font Properties.	110
Globally Change the Annotation Font Color.	111
Globally Change the Annotation Box Alignments.	112
Globally Change the Annotation Display Scale.	112
Globally Change the Box placements to fit in the Track width.	113
Carbonate Texture Layer	113
Carbonate Texture Matrix Layer	117
Sedimentary Structures Layer	121
Bioturbation Layer	125
Trace Fossils Layer	128
Rock Accessories Layer	131
Percent Layer	135
Adding a Percent Track / Layer	135
Drawing Percents	135
Deleting Percents	136
Changing the Percent Scale	137
Multi Array Data Layer	138
How to Add a Multi Array Track	138
Setting up the Layer using the Dialogue Window	139

Import Dip Meter Data

This method will allow the user to import ASCII, space, comma or tab delimited file formats into our database. We cannot import EXCEL or any other type of spreadsheet format. If the data comes that way you must resave it in another format before attempting to import the data.

Importing Dip Meter Data

1. To access the Dip Meter Import window, click on Import / Export under File to activate the pop-out menu

and then select **Import Dip Meter or click on the Import Dip Meter data button** on the **Import Toolbar**. This will activate the open Dip Meter Data file window as shown below.

Open Dip Me	ter Data File		? 🔀
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Dipeg Image DPG_Images cnrl mapping CNRL.las Core lab dat	g.cvm ta.csv	Core labs mapping file.cdm dip meter data.txt dip meter mapping.dmm dip meter mapping.dmm dip norwest lab data.csv Norwest lab data.xls norwest mapping file.cdm	🗐 survey for Vict
<			>
File name:	dip meter data.tx	đ	Open
Files of type:	All Files (*.*)	•	Cancel

2. Select the file from the folder or drive with the corresponding navigational tools provided and either double

click on the file name or click once and click on the **button**. This will activate the **Set** delimiter window as shown below.

N.B. The one on the left the delimiter is set correctly the one on the right the delimiter is set incorrectly.

1	Set Delimiter	Set Delimiter	X
	C Comma C TAB 🕫 Space		
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Correct		Not Correct	

3. Highlight the correct corresponding for button beside Comma, TAB or Space delimiter (if shown correctly the Example should read <column-break> between the data columns. If you see this then **click** on the **Finish**

button to close this window and activate the Dip Meter Data Import window shown on the next page.

Dip Meter Data Impor	rt -				×
File					
Open File	Open Map File		Dip Meter Group Save Map File	Bedding Dips	▼ Clear All Mapping
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<					Exit

Overview of the window.

The left hand side of the Dip Meter Data Import window allows the user to view the different data columns represented in the file numbered in ascending order.

The right hand side of the Dip Meter Data Import window allows the user to see the data fields associated with the Dip Meter Table supplied by Power*Suite.

Dip Meter Group Bedding Dips

Drop box allows the user to import the dip data into unique dip meter groups that have been made in the program.

Open File Button allows the user to open another Dip meter file after the Import window has been opened. Open Map File

Button allows the user to utilize the mapping file saved from above to remap data columns in the dip meter file to database fields in the dip meter table in the database.

Save Map File

Button allows the user to save the mapping between data columns in the Dip meter survey file to database fields in the Dip meter table in the database. Once the initial mapping has been done and saved, the user can utilize this mapping file so you do not have to repeat the clicking of dragging of data columns to database fields in the dip meter table again and again if you do not want to.

Clear All Mapping

Button allows the user to undo all the mapping from data columns in the dip meter file to database fields in the dip meter table that was done either by dragging or by utilizing the mapping file.

Edit Data File Button allows the user to open the file in Wordpad to look at the file format and possibly make changes to the data file prior to importing the files data.

Reload Data File

Button reloads the data into the sample portion of the file window.

Importing / Mapping of Dip Meter data.

A Dip Meter Layer should already have been added through the Log configuration builder so that a Dip Meter group exists in the database to be able to import Dip Meter data.

1. On the left side of the window Click and drag the data column you wish to import to the corresponding table field on the right side and release it when the field becomes highlighted. If mapped the field will turn green on the right and red on the left.

N.B. The user can Right click on the Field to remove the mapping.

2. Repeat the Clicking and Dragging of data columns to fields until all the columns that you want have been mapped.

o Meter Data Impo					
0 5k	One Mar El	1	Dip Meter Group	Bedding Dips	Class All Massing
Open File	Open Map File	1	Save Map File		Clear All Mapping
Contraction -	eft Mouse button. Drag the columns of				1
Data Column 2 <mark>244</mark> Column 1			ield Depth		Mapped Column Column 1
Column 1			Depth Dip Degree		Column 1 Column 2
Column 2			Dip Degree Dip Azimuth		Column 2
Column 4			Quality		Column 4
Column 5			Hole Deviation Degrees		Column 5
Column 6			Hole Azimuth		Column 6
Column 7			Туре		Column 7
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eprice of file 6.57 6.92 7.19 7.57 7.88 8.25	DIP 9.4 20.2 19.7 17.4 16.7	AZIM 234.1 256.8 246.1 225.3 251.2	 .5 .5 .5	.50 0 0 0 0	DEVI
6.92 7.19 7.57 7.88	9.4 20.2 19.7 17.4 16.7 17.7	AZIM 234.1 256.8 246.1 225.3 251.2	 .5 .5 .5	.50 0 0 0 0	DEVI

- 3. The user can save this mapping procedure at this time by **clicking** on the **button** and giving this procedure a file name and folder to be used again at a later date when you would have to import this data again.
- 4. Click on the **button**. After the data has been imported you will be prompted with a system message.

		Database Message 🛛 🔀	
		Imported Successfully.	
		ОК	
_	Acknowledge the Import message. Cli	ОК	button and then click on the 🔀 to exit or
5.	Acknowledge the Import message. Cli		button and then click on the set to exit or
	Exit	lose the Window.	

How to Import Dip Meter Data with an Existing mapping file.

1. To access the Dip Meter Data Import window, click on **Import / Export** under **File** to activate the pop-out menu and then select **Import Dip Meter or click on the Import Dip Meter button** on the **Import Toolbar**. This will activate the open Dip Meter Data file window as shown below.

Open Dip Me	eter Data File			? 🛛
Look in: 🔎	CNRL Demo	-	- 🗈	i 📸 🎫
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<)	>
File name:	dip meter data.tx	t		Open
Files of type:	All Files (*.*)		•	Cancel

2. Select the file from the folder or drive with the corresponding navigational tools provided and either double

click on the file name or click once and click on the **Den** button. This will activate the Set delimiter window as shown below.

N.B. The one on the left the delimiter is set correctly the one on the right the delimiter is set incorrectly.

	Set Delimiter		Set Delimiter
	C Comma C TAB 🕫 Space		ⓒ Comma ── TAB ── Space
	Example 6.57/column-break>3.4/column-break>234.1/column-break>.50/column-break>3.4/col		Example 6:57 9:4 234.1.50 3:4 193.8 COMPUTED
orrect	Finish	Not Correct	Firish

3. Highlight the correct corresponding button beside Comma, TAB or Space delimiter (if shown correctly the Example should read <column-break> between the data columns. If you see this then **click** on the **Finish**

button to close this window and activate the Dip Meter Data Import window shown on the next page.

4. In the upper portion of the window **click** on the **button**. This will activate an open file window.

Dip Meter D	ata Mapping File	? 🗙
Look in: 🔀	CNRL Demo 💌 🗲 🗈 (* 💷 *
🗀 JPG_Image	ies Core in Boxes es mapping.dmm	
File name:	dip meter mapping.dmm	Open
Files of type:	Dip Meter Data Map files (*.dmm)	Cancel

5. Select the mapping file with the ***.dmm** saved from previous imports of similar dip meter data files to your dip

meter table by highlighting the file and **clicking** on the **button** or double clicking on the file name. Once the file has been opened it will refresh with the current mapping configuration as shown below.

N.B. The user can Right click on the Field to remove the mapping.

6. The user can map more data columns on the left side of the window **by Clicking and dragging** the **column** you wish to import to the **field** on the right side and release it when the layer becomes highlighted.

		1	Dip Meter Group	ding Dips
Open File	Open Map Fi	le	Save Map File	Clear All Mapping
lick and Drag with the L	eft Mouse button. Drag the columns of	 of the data file over to the correspo	nding field	
Data Column		Field		Mapped Column
🗹 🌺 Column 1		De	pth	Column 1
🗹 🌺 Column 2			Degree	Column 2
🗹 🌺 Column 3			Azimuth	Column 3
🗹 🌺 Column 4		🔀 Qu		Column 4
🗹 🌺 Column 5			le Deviation Degrees	Column 5
🗹 🌺 Column 6			le Azimuth	Column 6
🗹 🌺 Column 7		Import 🛛 😹 Ty	De	Column 7
Edit Data File	Reload Data File	<		
ample portion of file				
ample portion of file DEPTH	DIP	AZIM	QUAL	DEVI
ample portion of file DEPTH 6.57	 DIP 9.4	AZIM 234.1	QUAL	DEVI
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ample portion of file DEPTH 6.57 6.92 7.19 7.57	DIP 9.4 20.2 19.7 17.4	AZIM 234.1 256.8 246.1 225.3	QUAL	DEVI
ample portion of file DEPTH 6.57 6.92 7.19 7.57 7.88	9.4 20.2 19.7 17.4 16.7	AZIM 234.1 256.8 246.1 225.3 251.2	QUAL	DEVI
6.92 7.19 7.57	DIP 9.4 20.2 19.7 17.4	AZIM 234.1 256.8 246.1 225.3	QUAL .50 .50 .50 .50	

6. Click on the **Import** button. After the data has been imported you will be prompted with a system message.



7. Acknowledge the Import message. Click on the button and then click on the kit to exit or click on the kit button to close the Window.

Import Modular Dynamic Tester (MDT) Data

delimiter window as shown below.

This method will allow the user to import ASCII, space, comma or tab delimited file formats into our database. We cannot import EXCEL or any other type of spreadsheet format. If the data comes that way you must resave it in another format before attempting to import the data.

Importing MDT Data

1. To access the MDT Data Import window, click on Import / Export under File to activate the pop-out menu

and then select **Import MDT or click on the** Import Dip Meter data button on the Import Toolbar. This will activate the open MDT Data file window as shown below.

Open MDT D)ata File		? 🗙
Look in: 障	CNRL Demo	- E	- 🖬 📩
Deg Imag DPG_Image Crrl mappir CNRL.las Core lab d.	ng.cvm ata.csv	Core labs mapping file.cdm dip meter data.txt dip meter mapping.dmm MOTOATA2.csv Morwest lab data.csv Norwest lab data.xls	縮 norwest mappi survey for Vict
<			>
File name:	MDTDATA2.cs	(Open
Files of type:	All Files (*.*)	•	Cancel

2. Select the file from the folder or drive with the corresponding navigational tools provided and either double click on the file name or click once and click on the **Open** button. This will activate the Set

N.B. The one on the left the delimiter is set correctly the one on the right the delimiter is set incorrectly.

	Set Delimiter		Set Delimiter
	€ Comma ⊂ TAB ⊂ Space		C Comma C TAB 🕫 Space
	Example seq <column-break>md<column-break>tvd<column-break>ssk<column-break>ssk<column-break>hp before<c< td=""><td></td><td>Example seg.md,tvd,ssl/tp<column-break>before.fp<column-break>after.fp.efw,temp,mob.formatic</column-break></column-break></td></c<></column-break></column-break></column-break></column-break></column-break>		Example seg.md,tvd,ssl/tp <column-break>before.fp<column-break>after.fp.efw,temp,mob.formatic</column-break></column-break>
Correct		Not Correct	

3. Highlight the correct corresponding button beside Comma, TAB or Space delimiter (if shown correctly the Example should read <column-break> between the data columns. If you see this then **click** on the **Finish**

button to close this window and activate the MDT Data Import window shown on the next page.

MDT Data Import		
File		
	MDT Run 1	•
Open File Open Map File	Save Map File	Clear All Mapping
Click and Drag with the Left Mouse button. Drag the columns of the data fil	e over to the corresponding field	
Data Column	Field	Mapped Column
Column 1	Seq. No.	
Column 2	Measured Depth	
Column 3	SSL Depth	
Column 5	Hydro. Prs. (Before)	
Column 6	Hydro. Prs. (After)	
Column 7	Import Formation Prs.	
Column 8	Eqvl. Fluid Weight	
Column 10	Mobility	
Column 11	Formation	
Solumn 12	Remarks	
	<	
Edit Data File Reload Data File		
Sample portion of file		
seg md tvd ssl hp before hp after fp	efw temp mob formation comment	^
1 201 201 799 2500.77 2002.44 1803.3 2 216.6 216.1 783.9 2510.35 2012.11 1	2 0.995 67.1 720.4102887 clearwater 813.99 0.995 69.2 700.5747173 clearw	allok 🧮 ater allok
3 232.2 231.2 768.8 2519.93 2021.78 1	824.66 0.995 71.3 612.4146669 clearw	ater all ok
4 247.8 246.3 753.7 2529.51 2031.45 1 5 263.4 261.4 738.6 2539.09 2041.12 1	835.33 0.995 73.4 925.5591136 clearw 846 0.995 75.5 396.1702937 clearwate	
	56.67 0.995 77.6 64.57052239 clearwat 867.34 0.995 79.7 163.2160302 clearw	
7 234.6 231.6 706.4 2336.23 2060.46 1	007.54 0.335 73.7 163.2160302 Clearw	
		Exit

Overview of the window.

The left hand side of the MDT Data Import window allows the user to view the different data columns represented in the file numbered in ascending order.

The right hand side of the MDT Data Import window allows the user to see the data fields associated with the Dip Meter Table supplied by Power*Suite.

MDT Run 1

 ${}^{\checkmark}$ Drop box allows the user to import the dip data into unique MDT groups that have been made in the program.

Open File Button allows the user to open another MDT data file after the Import window has been opened.

Open Map File Button allows the user to utilize the mapping file saved from above to remap data columns in the MDT data file to database fields in the MDT table in the database.

Save Map File

Button allows the user to save the mapping between data columns in the MDT data file to database fields in the MDT table in the database. Once the initial mapping has been done and saved, the user can utilize this mapping file so you do not have to repeat the clicking of dragging of data columns to database fields in the dip meter table again and again if you do not want to.

Clear All Mapping

Button allows the user to undo all the mapping from data columns in the dip meter file to database fields in the MDT table that was done either by dragging or by utilizing the mapping file.

Edit Data File

Button allows the user to open the file in Wordpad to look at the file format and possibly make changes to the data file prior to importing the files data.

Reload Data File

Button reloads the data into the sample portion of the file window.

Importing / Mapping of MDT data.

An MDT Layer should already have been added through the Log configuration builder so that an MDT group exists in the database to be able to import MDT data.

1. On the left side of the window Click and drag the data column you wish to import to the corresponding table field on the right side and release it when the field becomes highlighted. If mapped the field will turn green on the right and red on the left.

N.B. The user can Right click on the Field to remove the mapping.

2. Repeat the Clicking and Dragging of data columns to fields until all the columns that you want have been mapped.

									1			
								MDT Rur	ı 1			_
Ope	en File			Open	Map File			Save M	ap File	(Clear All Map	ping
ck a	nd Drag w	vith the Le	ft Mouse but	on. Drag the c	olumns of the c	lata file over to	o the corres	ponding fiel	d			
) ata	Column						Field	Ь			Mapped C	olumr
	Column 1	1						Seq. No.			Column 1	
	Column 2							Aeasured D	epth		Column 2	
	Column 3							VD Depth			Column 3	
	Column 4							SSL Depth			Column 4	
	Column 5							lydro. Prs. I			Column 5	
_	Column 6						1 1940	lydro. Prs. I			Column 6	
_	Column					Imp		ormation P			Column 7	
_	Column 8					-		avl. Fluid V	Veight		Column 8	
	Column S							emp (°C)			Column 9	
	Column * Column *							lobility ormation			Column 10 Column 11	
	Column							ormation Remarks			Column 11 Column 12	
							<				1	
dit D	ata File		B	eload Data File	1							
-					-							
imple q	e portion o md	tvd			npafter fj		temp	mob		omment		1
	201 216.6	201 216.1	799 2 783.9	500.77 2 2510.35	002.44 1 2012.11	803.32 (1813.99	0.995	67.1 5 69.2			all ok	
	232.2	231.2	768.8	2510.35	2012.11	1813.99	0.995	71.3	700.5747173 612.4146669	clearwater clearwater	all ok all ok	
	247.8	246.3	753.7	2529.51	2031.45	1835.33	0.995	73.4	925.5591136	clearwater	all ok	
	263.4 279	261.4 276.5	738.6 723.5	2539.09 2548.67	2041.12 2050.79	1846 1856.67	0.995	75.5 77.6	396.1702937 64.57052239	clearwater clearwater	all ok all ok	
	294.6	291.6	708.4	2558.25	2060.46	1867.34	0.995	79.7	163.2160302	clearwater	all ok	
												2

- 3. The user can save this mapping procedure at this time by **clicking** on the **bave Map File button** and giving this procedure a file name and folder to be used again at a later date when you would have to import this data again.
- 4. Click on the button. After the data has been imported you will be prompted with a system message.

	Database Message 🛛 🛛 🔀	
	Imported Successfully.	
	OK	
	ok on the OK	button and then click on the 🔀 to exit or
5. Acknowledge the Import message. Cli		button and then click on the set to exit or
click on the Exit button to cl	ose the Window.	

How to Import MDT Data with an Existing mapping file.

1. To access the MDT Data Import window, click on Import / Export under File to activate the pop-out menu

and then select **Import MDT or click on the MDT Import MDT button** on the **Import Toolbar**. This will activate the Open MDT Data file window as shown below.

Open MDT D)ata File		? 🗙
Look in: 险	CNRL Demo	• E	- 📫 💷
Dreg Imag DFG_Image CrrI mappir CNRL.las Core lab d.	ng.cvm ata.csv	Core labs mapping file.cdm dip meter data.txt dip meter mapping.dmm MDTDATA2.csv MOTDATA2.csv MOTWAST lab data.csv	 norwest mappi survey for Vict
<			>
File name:	MDTDATA2.cs	<i>i</i>	Open
Files of type:	All Files (*.*)	•	Cancel

2. Select the file from the folder or drive with the corresponding navigational tools provided and either double click on the file name or click once and click on the **Open** button. This will activate the Set

delimiter window as shown below.

N.B. The one on the left the delimiter is set correctly the one on the right the delimiter is set incorrectly.

S	et Delimiter 🛛 🛛		Set Delimiter
			C Comma C TAB 🕫 Space
	Example seq <column-break>md<column-break>tvd<column-break>ssl<column-break>hp before<c< td=""><td></td><td>Example seq.md.tvd.ssl.hp<column-break>before.hp<column-break>after.fp.efw.temp.mob.formatic</column-break></column-break></td></c<></column-break></column-break></column-break></column-break>		Example seq.md.tvd.ssl.hp <column-break>before.hp<column-break>after.fp.efw.temp.mob.formatic</column-break></column-break>
	Finish		Finish
orrect		Not Correct	

3. Highlight the correct corresponding button beside Comma, TAB or Space delimiter (if shown correctly the Example should read <column-break> between the data columns. If you see this then **click** on the **Finish**

button to close this window and activate the MDT Data Import window shown on the next page.

4. In the upper portion of the window **click** on the **Open Map File button**. This will activate an open file window.

MDT Data M	apping File		? 🔀
Look in: 📔	CNRL Demo		
Deg Imag DPG_Imag			
File name:	mdt mapping file.mdt		Open
Files of type:	MDT Data Map files (*.mdt)	•	Cancel

5. Select the mapping file with the *.mdt saved from previous imports of similar MDT data files to your dip

meter table by highlighting the file and **clicking** on the **button** or double clicking on the file name. Once the file has been opened it will refresh with the current mapping configuration as shown below.

N.B. The user can Right click on the Field to remove the mapping.

6. The user can map more data columns on the left side of the window **by Clicking and dragging** the **column** you wish to import to the **field** on the right side and release it when the layer becomes highlighted.

	MDT Run 1	•
Open File Open Map File	Save Map File	Clear All Mapping
Click and Drag with the Left Mouse button. Drag the columns of the data file over		
Data Column	Field	Mapped Column
Column 1	Seq. No.	Column 1
Column 2	Measured Depth	Column 2
Column 3	TVD Depth	Column 3
Column 4	SSL Depth	Column 4
🗹 🌺 Column 5	Hydro. Prs. (Before)	Column 5
🗹 🌉 Column 6	😹 Hydro. Prs. (After)	Column 6
	Import Formation Prs.	Column 7
Column 8	Eqvl. Fluid Weight	Column 8
Column 9	Temp (°C)	Column 9
Column 10	Mobility	Column 10
Column 11	Formation	Column 11
Column 12	25 Remarks	Column 12
	<	>
Edit Data File		
ample portion of file eq md tvd ssl hp before hp after fp efw	v temp mob formation comment	
201 201 799 2500.77 2002.44 1803.32	0.995 67.1 720.4102887 clearwater	all ok 🚊
2 216.6 216.1 783.9 2510.35 2012.11 1813.9 3 232.2 231.2 768.8 2519.93 2021.78 1824.0		
3 232.2 231.2 768.8 2519.93 2021.78 1824.1 4 247.8 246.3 753.7 2529.51 2031.45 1835.3		
2 216.6 216.1 783.9 2510.35 2012.11 1813.3 3 232.2 231.2 768.8 2519.93 2021.78 1824.1 4 247.8 246.3 753.7 2529.51 2031.45 1835.5 5 263.4 261.4 738.6 2539.09 2041.12 1846.6 6 279 276.5 723.5 2548.67 2050.79 1856.67 7 294.6 291.6 708.4 2558.25 2060.46 1867.1	0.995 75.5 396.1702937 clearwater 7 0.995 77.6 64.57052239 clearwater	all ok rall ok
6 279 276.5 723.5 2548.67 2050.79 1856.67 7 294.6 291.6 708.4 2558.25 2060.46 1867.:		
<		>
		Exit
k on the Import button . After the data has	been imported you will be prompt	od with a cyste
	been imported you will be prompt	eu wiin a s ysie
ssage.		
Database Me	ssage 🔀	
Imp	orted Successfully.	
· · · · · · · · · · · · · · · · · · ·		
	ок	
	ок	

Print Log- File Pull down menu

Prints all or part of your log/well along with the Title page, legends, individualized cores and formation tops on a continuous or single sheet basis

1. Under the File menu selection, click on Print Log or click on the Print button on the Toolbar to activate the Print Log window shown below:

Note: The Title bar and all depths associated with the Print Log window are defaulted to the Depth View that Power*Log or Power*Curve are in at the time of the activation of the Print Log window.

		Print [View Mode: MD]		
		Printer: Acrobat Distiller		
			Page Margin: 0.25	
		Title Page/Legend/Tops Page Orientation: legal landscape	Page Overlap	
		Options	Print Methods	
		Strip Log Title Page Core Log Title Page TON/CON DMD	C Default	
		Sample Log Title Page		
		Title Page Remarks	Meta File	
		Title Page remarks	- Color Options	
		Only for the Striplog Ttile Page	C Auto	
		Legend 🔲 Use Dynamic Legend	Color	
		Log	C Mono	
		Scale: 240 V Header V Footer Core Accessories		
		User-defined Interval	Interval per Page	
		Today Section (0.00 to 0.00) Well Section (0.00 to 0.00)	67.06	
		Lithology Section (315.50 to 1593.50)	Log Width: 21.90 "	
		User-defined Interval: 315.5 to 1593.5	21.00	
			Print	
		Scale: 120 Footer		
			Exit	
			Printer Setup	
		Formation Tops	Help	
		Print Quality: 1200 🔽 🗖 Blank First Page		
				•
	Title Page/Legend/Top Page Orientation:		., .	
2.	-	ge, Legend, and Formation Tops wi		entation from this drop box
		e four (4) types of paper orientation to		
	legal portrait or land		choose nom. Ietter	
Note: T	• .			
	_	scape or portrait settings selected t		_
		settings selected in the printer's Prop		· · ·
the pape	_	in your printer's Properties window to		
3.	Strip Log Title Page	Activate this check box 🗹, if you wis	h to printout a full W	ellsight Version of the Title
	Page.	_		
4.		Activate this check box k, if you wis	h to printout an abb	reviated version of the Core
	Log Title Page.	_		
5.		age Activate this check box 🗹, if you v	vish to printout an al	obreviated version of the
	Sample Log Title Pag			
	🔽 Logo	6. Activate this check box , if y	ou wish to printout a	logo, and then select a logo
		from the Logo drop box field.		
	TRIVISON.BMP			

<u>Note</u>: Any bitmap image may be printed out as a logo. However, the bitmap image must be an equally sided square image, because **Power*Suite** will shrink or expand the image to fit the logo space on the **Title Page**. This bitmap should be placed in the **Powersuite_V9\logo directory**.

- 7. Type any pertinent **comments into the Title Page Remarks** field and they will be displayed accordingly on the **Strip Log Title Page only**.
- 8. Legend Activate this check box , if you wish to have our entire legend printed out.
- 9. Use Dynamic Legend Activate this check box , if you wish to have the legend reflect only the symbols printed on the log or core portions of the printed intervals defined in the log and core portions of the print log window.

In the Log portion of the Print Log window

- 10. Log Scale: 240 Select or type in the Scale for the main log to be printed out at, in the Scale drop box field.
- 11. Header Activate this check box K to have the track headers printed out with the main log.
- 12. Footer Activate this check box I to have the track footers printed out with the main log.
- 13. Core Accessories Activate this check box 🗹 to have the core accessories printed out on the main log.

None	~
User-defined Interval	
Today Section (234.00 to 345.00)	
Well Section (200.00 to 1600.00)	
Lithology Section (315 50 to 1593 50)	
200	
User-defined Interval: 200 to 1600	

Highlight the main log printing options in the selection box. The user can select either None, User-defined Interval (requires that you manually enter the desired print interval depths), Today Section, Well Section, or Lithology Section.

<u>Note</u>: Today Section interval is derived from the From and To Depth values entered into the Today's Section portion of the Power*Log Data Transfer: Export window.

The **Well Section** interval is derived from the **Top** and **Base Depth** values entered into the **Print Sections** window (see **Print Sections**).

The **Lithology Section** interval is derived from what has been drawn into the interpretive lithology track of the well that is being printed.

15. If user **defined interval** is chosen the user can select which depth type, either measured depth, true vertical depth or subsea level depth from the depth measurement drop box. The user must also type in the depth interval to be printed.

<u>Note</u>: The log itself must be displayed in whatever depth view you wish to print before you activate the print log window. To change the log to the desired format, refer to depth view under the view pull down menu.

In the Cores portion of the Print Log Window

- 16. If you are printing out a **Core** log on the tail of the striplog, select the Cores you wish to print by highlighting them.
- 17. CoresScale: ¹²⁰ Select or type in the Scale for the core log to be printed out at in the Scale drop box field.
- 18. Header Activate this check box 🗹 to have the track headers printed out with the core log.
- 19. Footer Activate this check box 🗹 to have the track footers printed out with the core log.

<u>Note</u>: A separate Header Information Box is automatically printed out with every Core and includes the Core Scale, Core Date, Core Number, Cored Interval, Amount Cut, Amount Recovered, and Percentage.

**A value must be entered into the Core Scale field in order to printout anything. **

20. Formation Tops Activate this check box *if* you wish to printout Formation Tops and the Formation Tops will be included on a separate page at the end of the log printout.

Page Margin: 0.25 The page margin field is available, primarily, when you are printing to Adobe Acrobat writer. When a numerical value in inches is typed into this field it will initiate a top and left margin for the templates (Title Page, Legend and Formation Tops) as well as a left margin for the main log.

► Page Overlap Activate this check box ► if you are printing on single sheets. This will force the printer to include an additional 1/4 inch of the log at the top and bottom of each page, so that you can cut-and-paste pages manually, if you so desire.

Activating the **Default** radio button **S** forces Power*Log / Core & Curve to use a **raster or bitmap graphic printing**

Г	Print Methods
	🔿 Default
L	Meta File

method. This printing method is generally used with Laser printers but not exclusively so. Activating the **Meta File** radio button forces Power*Log / Core & Curve to use the **meta file technology printing method**. This printing method was developed for the newer models of printers on the market today as well as using the Adobe Acrobat Distiller **or pdf printing**

technology.

Auto Activating the Auto radio button inforces Power*Log / Core & Curve to use the settings from the printer driver to printout the log.

Color options
C Auto
Color
O Mono

Color Activating the Color radio button forces Power*Log / Core & Curve to override the printer driver settings and consequently Power*Log / Core & Curve assumes that you are using a color printer.

Mono Activating the Mono radio button in forces Power*Log / Core & Curve to override the printer driver settings and consequently Power*Log / Core & Curve assumes that you are using a monochrome (black and white) printer.

21. Click on the Printer Setup... button to activate the Print Setup window and confirm that the correct printer settings are in effect.

<u>Note</u>: If you are printing out logs in color, **you must activate the Diffusion** or **Error Diffusion** option normally found under **Graphics** in the **Properties** window for most printers.

- 22. **Interval per page** field indicates how many meters of log will fit on a page of selected paper size and orientation selected in the setup as well as what log scale you are printing at. This will help indicate to the user how many pages will be required by the print job.
- 23. Blank First Page Activate this check box if the user wishes to have a blank page before the logs starts. This could be useful if utilizing continuous paper when you want the title page oriented on the correct side of the prefolded paper.

Print

24. When you are ready to print your log, click on the

button.

<u>Note</u>: If you do **exit** from the **Print Log window**, you will be asked if you wish to save the print settings. If you click on **Yes**, the program will remember every setting that you made to the **Print Log** window and then will default to those settings the next time you enter the Print Log window

Undo – Edit pull down menu item

The Undo selection allows the user to undo any or all of the striplog manipulations, with respect to the layer functionalities, performed on the striplog. This includes adding, deleting, resizing, moving etc. of any of the individual layers functionalities. The undo comments changes with each function performed to indicate what undo action can be performed. This now applies to all Annotations done on the log as well.

Redo – Edit pull down menu item

The Redo selection allows the user to redo any or all of the striplog manipulations, with respect to the layer functionalities, performed on the striplog. This includes adding, deleting, resizing, moving etc. of any of the individual layers functionalities. The redo comments changes with each function performed to indicate what redo action can be performed. **This now applies to all Annotations done on the log as well.**

Well Window – Edit pull down menu item

We have added 4 new fields to this table including Intermediate Casing Coordinates Metes and Bounds as well as Longitude and latitude.

Well			
Save Und	lo New Del First Prev ? Next	Last Storage Units: Metr	ic 🔽 Original Units: Metric 💌
Uwi	ABC 0il 12-25-45-12	Location: 12-25-45-12 W4	
Well Name	ABC Oil Anywhere 12-25	Licensee: ABC Oil Resourc	
Operator:	ABC Oil Resources Ltd.	Pool: Lamba C Pool	Field: Anywhere
Drilling Contractor:	12	Elevations	
- County:		Reference: Ground	Ground / Collar: 21.1
Province/State:	Alberta	KB: 24.9	Casing Flange: 21.08
	Canada		
Surface Coordinal	es		
Latitude 0.1214	18		f the South boundary of Sec. 23-45-12 W4
Longitude 10.057	7	E/W: 310.12 meters East of	the West boundary of Sec. 23-45-12 W4M
- Intermediate Casir	ng Point Coordinates	-	
Latitude 0.1214	7	N/S: 324.26 meters North of	f the South boundary of Sec. 23-45-12 W4
Longitude 10.057	7	E/W: 310.12 meters East of	the West boundary of Sec. 23-45-12 W4M
Bottom hole Coord	linates		
Latitude 0.1215	51	N/S: 710.5 meters North of	original Surface Location.
Longitude 10.057	78	E/W: 262.04 meters West o	of original Surface Location.
UTM Surface Cod	rdinates		
Northing: 63499	70.4	Easting: 470028.2	
Hole Direction:	orizontal 🗾 🗖 Faulted	Deviated Hole ID:	Hole 1 plus 23
- Depths			Date Time Work Schedule
	ers T.D. Drillers T.D. Drillers T.D. Loggers T.D. y) TVD (Strap) MD (Strap) TVD MD	Loggers T.D. Spud: TVD	Feb 25, 2001 22:15 Curves
[1037 [395.]			Mar 7, 2001 06:15 Mud Types
KB to Ground Cu	I I I I I I I I I I I I I I I I I I I		Mar 10, 2001 12:00 Dir. Surveys
3.8	5 1 300	305 Well Status:	Potential Lower Det. Lith.
Water Dept	h Reference: Mean Water Depth:	12.5	Sephton Oil Well

Core / Sample Header – Edit pull down menu item

The **Core / Sample Header** window allows you to edit the information being displayed when the core or sample log header is printed. It also allows you to delete the core log header.

	Core	Loa	Nie.
Well Name: testing with system logs	Location:	Ground / Collar: 123.23 (m)	1000
UWI: testing with system	KB: 2345.56 (m)	UTM East: 2345678.9	
Hole ID: 3939kfk48	Core Quality: Good	UTM North: 1234567.88	
Cored Interval: 4 (m) to 1234.53 (m)	Logged by: bob Sephton	Slabbed: Yes	STENS
Depth Correction: Corrected +1.4 m	Date: Jul 5, 2006		
L			
	Sample		
ame: Oil Bands Anywhere	Location: 16-12-34-23 WEM	cLog Ground / Collar: 293.8 (m)	
ame: Cil Bands Anywhere 5-1005			£
,	Location: 16-12-34-23 W5M	Ground / Collar: 293.8 (m)	Â
5-1005	Location: 16-12-34-23 WEM KB: 296.7 (m)	Ground / Collar: 293.8 (m) UTM East: 6349690.3	5
5-1005 1: Hole 2	Location: 16-12-34-23 W5M KB: 296.7 (m) Sample Quality: Good	Ground / Collar: 293.8 (m) UTM East: 6349690.3	5

How to Edit a Core / Sample Header

1. Click on the Core / Sample Header selection located under the Edit pull down menu.

e / Sample Heade	r		
Save Del			
			Interval
Date Logg		Top Dep	
I I	ifer Wright	200	1400
Depth Corrected Rem	ark	_	Quality Remark
Lost Core - 9.9m		✓ Slabbed	Good
Remarks			
Lab Recovery - 99.03	% Field Recovery - 99.4% [DD • Dec 12/05	<u>^</u>
			~
Well Becord Data			<u>></u>
	0.00		
KB:			
Ground Elev / Collar:	293.70		
UTM Easting:	6349781.60		
UTM Northing:	469943.50		
Hole ID	Hole 4		
			Edit Well

- 2. In the **Logged by** field, type in the name of the person who the core is logged by.
- 3. In the **Top Depth** and **Base Depth** fields, type in the Top Depth and Base Depth of the core / sample interval.
- 4. In the **Depth Corrected Remark** field, type in the remark related to depth change that you wish to appear at the core log header.
- 5. Activate the **Slabbed** check box $\boxed{\mathbf{N}}$, if you wish the core log header to be cut in half. This is not applicable to the Sample Log abbreviated Header.
- 6. In the Quality Remark field, type in the remark related to quality that you wish to appear at the core log header.
- 7. In the Remarks field, type in any other remarks that you wish to appear on the Core Log header.

N.B. The Remarks field is limitless as the Core Header Expands to the appropriate size to accommodate the entire Remarks Field.

Well Record Data portion of the Core / Sample Header window

- Edit Well button to enter KB and Ground Elevation. The Well window will be shown. 1. Click on the Undo New Del ? Next Last ٠ Original Units Met Location: 12-25-45-12 W4M UWI Ucensee: ABC DJ Resou Pool: Lamba C Pool Elevations License # 12424 Operator: Contractor: Field Arguher Total Deepmess 35 Abel Canad Country 0.12148 N/5- 224.23 me as North of the South by of Sec. 23-45-12-W4 ongitude 10.0577 E/W: 310.12 meters East of the West b idary of Sec. 23-45-12 W4M diate Casing Point Coordinates Labbade 0 12147 N/S 324.26 met w North of the South houndary of Sec. 234512W4 ongitude 10.0577 EAV 310.12 meters East of the West boundary of Sec. 23:45-12 W4M ottom hole Coordin atitude 0.12151 origitude 10.0578 N/S: 710.5 meters North of original Surface Loc E/W: 262.04 meters West of original Surface Lo Northing 6349970.4
- Potential Lower Sephton Oil Well 125 Water Depth Reference: Mean Abstract In the KB field, enter the KB. In the Ground / Collar, enter the ground elevation as well as the UTM 2. coordinates and the Hole ID if you have them.

Devic

394.06

Sidetrack 305

Feb 25, 2001 22:15

T.D. Mar 7, 2001 06:15

Rig Release: Mar 10, 2001 12:00

Well Status:

Cirvet

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Plugback 300

Drillers T.D. Drillers T.D. Drillers T.D. Loggers T.D. Loggers T.D. (Tally) MD (Tally) TVD (Strap) MD (Strap) TVD (MD TVD

395.6

Taly TVD 10 395.6 1037 395.6 and Cut Fil 1

KB to Ground Cut 3.8 1.5

Save 3. Click on the button or press ALT-S. This will activate the Core Header window showing the KB and Ground Elevation that you have just entered.

Save Del				
Coring Date Logo	and by	Te	Core i Depth	Interval Base Depth
	Sephion	4		1234.53
Depth Corected Ren	nań.		0	ualty Frenak
Depth Corrected +1	5	FF Slate	ted fo	boot
Flemanka				
Well Record Duta				
12				
KB Ground Elev / Coler	123.23			
KB: Ground Elev / Coller UTH East	(12)2) (2)45678-90			
KB Ground Elev / Coller UTH East UTH North	(123/23) (2345678/90 (1234567/00			
KB Ground Elev / Coller UTH East UTH North	(12)2) (2)45678-90			

Exit button. If the record has been successfully saved, click on the appropriate button 4. Click on the when prompted with the Shortcut Options system window.

How to Delete a Core / Sample Header

Yes

- Click on the Core / Sample Header selection located under the Edit pull down menu. This will activate the 1. Core / Sample Header window.
- Del button, and the Confirmation window will be shown. 2. Click on the

3.	Click on the	

	button , and the Core Header will be deleted.
--	---

Field Restriction Table:			
Date	DATE FORMAT	Default=Current Date	Optional
Logged By	50	Character	Optional
Core Interval Top Depth	5.5	Numeric	Mandatory
Core Interval Bottom Depth	5.5	Numeric	Mandatory
Depth Corrected Remark	20	Character	Optional
Quality Remark	20	Character	Optional
Remark	40,000	Character	Optional

Layer Configuration - Edit pull down menu item

The Layer is the lowest level of a log. A layer is part of a track, which in turn is part of a log. The Layer Configuration window allows you to edit all aspects of any given layer. You have access to all layer attributes, including curve attributes, layer grid styles and patterns and layer display controls. You may also control the display format and depth offset of layers in this particular window. None of the layer data types use all the layer controls.

A layer is a set of information that is displayed on a track. A track can consist of one or more layers. The layers are positioned within a track and are superimposed or stacked on top of one another, if there are multiple layers in a track. You are able to show/hide the layers and adjust the layering order. This can be done in the Layers Organizer window located under the view pull down menu.

You can only work with one layer at a time and we call this the **active layer** on an **active track**. Layer information is restricted to the **Primary Well** of your log, unless you have the **Correlational Module**, which allows a layer to be pointed at any well in the database. A layer can access any type of information in the **Primary Well** or any other well in the database and display it within the log. A layer can be offset on its depth axis to make correlations between wells relatively simple.

In the Layer Configuration window, you are able to associate specific Annotation Groups with Annotation layers via their Annotation Group ID. The user can also associate specific Data Groups with a specified layer.

<u>Note</u>: The **Correlational Module** allows you to access all of the **UWI's** or wells in the database in order to display their information in comparison with the current **Primary Well** on the same log.

There are numerous Data Types for Layer Configurations. Each data type viewed below are shown in the data type field of each layer and it represents what type of data each layer can show. For instance a Curve layer can only show curves. The directional survey layer can only show survey data. These data types are listed on the next page.

Accessories Age (Era/Series/Stage) Annotation (Track) Annotation (Log) **Bedding Contacts** Bioturbation Bit Record Carbonate Texture **Carbonate Texture Matrix** Casing Data Core **Core Box Data Core Bulk Density** Core Grain Density **Core Permeability Kmax** Core Permeability K90 Core Permeability KV **Core Permeability K Air Core Porosity Calculated Core Porosity Helium Core Porosity Measured** Core Sample Code Curves Curve Fill **Date / Drilling Schedule**

Depth **Detailed Lithology** Diagenesis **Dip Meter Data Directional Survey** Formation (Group / Formation / Member) Formation (Short Name) Formation (Long Name) Fractures Framework Generic Category **Grain Size Grain Size Matrix** Graphics Hole Dip Meter Data Interpretive Lithology % Lithology Lithology Descriptions MDT Data Multi Array Curve layer **Oil Show Oil Staining** Percent

Porosity Grade Porosity Type **Physical Contacts** Rounding **Core Saturated Bulk Mass – Fluids** Core Saturated Bulk Mass - Oil Core Saturated Bulk Mass - Water Core Saturated Bulk Mass – Solids Core Saturated Bulk Mass – Totals Core Saturated Grain Mass – Oil Core Saturated Grain Mass – Water Core Saturated Pore Volume – Oil Core Saturated Pore Volume – Water Core Saturated Pore Volume (Frc)- Oil Core Saturated Pore Volume (Frc)- Water Sedimentary Structures Sidewall Cores Slide / Rotate Snieder's Rock Type Geology Snieder's Rock Type Core Sorting Survey Test **Trace Fossils**

Shortcut:

This is an example of our Tab Dialogue Configuration window for a Curve Data Type Layer:

POWER SUITE Addendum User Manual Version 9.0

Layer - Display Satings Curve Definitions Layer Scaler Data Group Da Formation and Age Display Dip Meter Definitions Save Undo Name (Display Layer Name or Curve Scaler on Track © Display Decksop scaler Display Decksop scaler © Display Decksop scaler © Di

How to Edit a Layer Configuration Window

- 1. Make the desired layer active by **clicking** once on the **track** containing the layer to make the track active (Highlighted in Green).
- 2. Click on the Layer Selection List located on the Selection Bar (top left corner) and select the desired layer name contained within the currently active track that you wish to edit or make changes to.
- 3. Click on the Edit pull down menu and select Layer Configuration or click on the Layer Configuration button on the Toolbar to activate the Layer Configuration window.

Note: You may also access the Layer Configuration window by clicking on the	button within the Log
Configuration Builder window, once you have highlighted the layer that you wish to edit.	

4. Edit the Layer Configuration window, according to the specific requirements of each individual layer or data type as to what you would like the layer to look like, as outlined in various sections of the User Manual and

then **click** on the **Save button** when finished.

5. A system message will appear telling the user "Record saved successfully. Do you wish to Exit?" Click on

the **Yes** button to exit the window and view your changes.

Display Settings Tab

This tab in the layer configuration window allows the user to change the display setting for each individual layer. An example is shown below:

Active Layer Configuration [Drill Rate]	
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Display Layer Name or Curve Scale on Track Show Layer on Track Show Layer on Track Display Vertical Orientation (Layer Name) Display Backup scales Display Backup scales Display scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid Display Data-Axis Grid	Data Type: Curve
	OK Cancel Help

Once a field in this Layer Configuration Tab dialogue window has been changed the user must then click on the Save button or press ALT-S.

The Name: Drill Rate field in yellow is a mandatory field. This is the name that is displayed for a layer or a curve irregardless of the Curve you have identified to show on this layer within the Curve Definition Tab of this dialogue window.

Display Layer Name or Curve Scale on Track_ If this box is checked (default), indicates that the Curve Scale or Layer heading will be displayed in the track header.

Show Layer on Track- If this box is checked (default), indicates that the layer is being displayed.

Display Vertical Orientation (Layer Name) If this box is checked indicates that the Layer heading will be displayed vertically in the track header. If unchecked it will be displayed horizontally.

Display Backup scales If this box is checked (default), any time a curve goes off scale or wraps the curve is hatched and the backup scale is viewed on the Layer.

Display scales on non-active layers If this box is checked (default), it will display the scales (including scale changes) for a curve on the log will be shown regardless of which layer is active at the time.

Display Full Logarithmic Scale If this check box is activated it will display all the major cycles will be labeled. If this is unchecked or deactivated only the two end borders of the scale will be activated.

Display Depth-Axis Grid If this box is checked (default), it will display the Depth Axis Grid (X-axis), Horizontal grid lines in Power*Log and Vertical grid lines in Power*Curve as defined in the Log Configuration Layer Scale Tab Dialogue window.

Display Data-Axis Grid If this box is checked (default) it will display the Data Axis Grid (Y-axis) Vertical grid lines in Power*Log and Horizontal grid lines in Power*Curve, as defined in the Log Configuration Layer Scale Tab Dialogue window Data Axis Grid Style.

UWI... **UWI Button**

Normally, the UWI field within the Layer Configuration window should be blank, because the layer normally exhibits data from the Active or Primary Well on the current log. This Button or field (if you have the Correlational Module) will allow you to exhibit another wells data.

Note: If you decide to use this log as a template for creating future logs and refrain from clearing the UWI field(s) in the Layer Configuration window(s), then all future logs created from this template will contain layers pointing to another UWI.

If you possess the **Correlational Module**, you can use the **UWI... button** to access data from other **UWIs** or wells within the database.

How to Display a different Wells data on a layer of an Existing Log from another UWI or well.

- 1. To access other wells within the database, **click** on the **UWI**... **button**. This will activate a Well List window.
- 2. Double click on the Well you wish to display on this layer. This will select the well you wish to retrieve the data from. You will now view the UWI of the well you chose in the UWI field of the Layer Configuration window. However, keep in mind that the type of well data that you are able to retrieve is dependent upon what layer was active at the time you attempted to retrieve the well data from within the Layer Configuration window.

For example: If the active layer within the Layer Configuration window, at the time of the retrieval, was a Curve

layer. Then, the only well data you would be able to retrieve from another well in the database, via the button, would be Curve layer data.

Foreground Color: black This field will change the color of individual items with a fill

pattern, such as Grain Size, Carbonate Texture, and Porosity Grade and MDT Data Layers

Depth Offset:

(Correlational Module only), This field allows you to offset a layer by typing the depth you want to offset the layer by into the Depth Offset field.

Note: A positive (+) number will move the layer DOWN the striplog, while a negative (-) number will move the layer UP the striplog.

Display Scale Placements Every 50 Start at: 0

The **Every Field** indicates the frequency (at either 1:240 or

5") at which the curve scale will be indicated for that curve layer on the log. If all curve layers on a track have this same frequency and start depth they will be staggered according to the scales on the track header for that track. The Start At field indicates where the first scale for the curve will be placed and then it will add whatever is in the Every field and place the curve scale for that curve on the layer. There will be no curve scale it there is no data over that particular interval on the log.

Example. Every field 50, Start at field 250. You will have a scale placed on the log for that curve layer at 250, 300, 350, 400 etc.

Note: If the Start at and Every fields are Blank the default for the scale placement will be at the top of the screen or the top of every printed page. But they will only show if the Curve layer is the active layer on the track at the time of printing or viewing regardless of if the Scale on non-active layers is checked.

Once a field in this Layer Configuration Tab dialogue window has been changed the user must then click on the Save button or press ALT-S.

Curve Definitions Tab

This tab in the layer configuration window allows the user to change the curve attributes for each individual curve layer. An example is shown below:

Active Layer Configuration [Drill Rate]
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo
Curve List Button Drill Rate
Edit Curve Attributes
Width: 3
Pattern: PtoP2
Style: gray
Color: Point Indicator:
Point Indicator.
OK Cancel Help

Once a field in this Layer Configuration Tab dialogue window has been changed the user must then click on the Save

button or press ALT-S.

The Curve List Button... button in the Curve Definitions tab of the Layer Configuration window activates a list of the curves associated with the active layers well. These Curves have been created through the Add Curve window when new Curve layers have been added to a log or when a new log has been started. The user has the ability to show any Curve and its values that has been added to the database as long as the data type for the layer is Curve.

Edit Curve Attributes The button activates the Digital Curve window and the user can edit the curve attributes as well as get at a secondary window to edit or view the curve scales. There are three ways to change the Curve Attributes. One is through the Layer Configuration window and the other is in the Well Window and is located under the Edit pull down menu. The last way is to right click on a curve layer and select Edit Curve from the pop out menu selection.

The Curve Field between the Curve and Curves Button shows the curve that is being displayed on that particular curve layer.

The Width Field indicates the width of the curve in pixels. To change, click in the Width field and typing in a new curve width (Values [1-9]).

The Pattern Field indicates the line pattern associated with the curve. The user has five (5) patterns to choose from.

PtoP	point to point curve (stop curve at null values)
PtoP2	point to point curve (disregard null values [continuous curve])
Box	histogram or box curve (stop curve at null values)
Box2	histogram or box curve (disregard null values [continuous curve])
Track Fill	fills track with color determined in the pgeology32.ini
Histogram	draws a colored histogram the width of the line width from the data point back to the
	lowest value track edge.
Points Only	shows only the data points and defaults to circles if nothing defined in the
	point indicator portion of curve definitions

The Style Field indicates the line style associated with the curve. The user has five (5) styles to choose from. They are Solid, Dash, Dot, Dash Dot, and Dash Dot Dot. This field can be changed by clicking on the style field and selecting a new style from the drop down list.

The Color Field indicates the line color associated with the curve. The user has a lot of curve colors to choose from. This field can be changed by clicking on the style field and selecting a new style from the drop down list

The **Point Indicator** Field indicates if the data points for the curve selected will be marked with some kind of indicator demonstrating where the actual curve data points are that make up the curve representation. The user has a lot of curve point indicators to choose from. This field can be changed by clicking on the style field and selecting a new point indicator or none from the drop down list.

Once a field in this Layer Configuration Tab dialogue window has been changed the user must then click on the Save

button or press ALT-S.

How to select a different Curve to display on a Curve layer

- 1. Click on the track containing the Curve layer to make the track active (Highlighted in Green).
- 2. Click on the Layer Selection List located on the Selection Bar (top left corner) and select the desired *Curve* layer contained within the currently active track that you wish to edit or make changes to.
- 3. Click on the Edit pull down menu and select Layer Configuration or click on the Layer Configuration button on the Toolbar to activate the Layer Configuration window or right click on the layer and select Edit options and then Edit Layer from the pop out menus.
- 4. Click on the Curve Definitions tab
- 5. Click on the Curve List Button... button. This will activate a list of all the Curves that have been created for this well.
- 6. Select the Curve you wish to display on this layer by **double clicking** on the desired **Curve**. If selected the

Curve Name will show in the field beside the Curve List Button... button.

- Click on the **Save** button or press ALT-S, when you are finished. 7.
- A system message will appear telling the user "Record saved successfully. Do you wish to Exit?" Click on 8. Yes the

button to exit the window and view your changes.

How to change the Curve Attributes (Curve and Units, Null Value and Remarks)

- 1. Click once on the track containing the Curve layer to make the track active (Highlighted in Green).
- 2. Click on the Layer Selection List located on the Selection Bar (top left corner) and select the desired
- Curve layer contained within the currently active track that you wish to edit or make changes to.
- 3. Right Click on the Layer and select Edit Options and then click on the Edit Layer selection or click on

Edit pull down menu and select Layer Configuration or click on the Layer Configuration button on the Toolbar to activate the Layer Configuration window or Select the Edit Curve selection. Click on the Curve Definitions Tab

- 4.
- Edit Curve Attributes Click on the 5. button. This will activate Digital Curve window:

Digital Curve		
Save Undo Ne	ew Del First Prev ? Next Last	Scale
Name	Drill Rate	
Units:	nin/m 💌	
Depth Units:	n 💌	
Null Value: 🖡	1	
Remark:		

6. The Default Curve name will be the one in the Layer Window but the user can access any curve associate

with the active well. The user can **click** on the **button** to see a list of the curves associated with the primary well.

- 7. You can now rename, or type in new units, change the null value, or add/change the remarks.
- 8. **Click** on the **Save button or press ALT-S.** The user can also change the curve scales by clicking on the Curve Scales button and editing the curve scales here, and then, **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Layer Scales Tab

This tab in the layer configuration window allows the user to change the scale on non curve layers as well as curve or layer attributes that utilize grid attributes for each individual layer. The six data layer types that would utilize this tab would be all curves, Grain Size, Carbonate texture, Porosity Grade, Percent and Dip meter layers. An example of a grain size layer is shown below:

Active Layer Configuration [Grain Size]	
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Ag	e Display Dip Meter Definitions
Save Undo	
Porosity Grade Scale Percent Layer Scale Dip Meter Scale Grain Size Scale Carbonate Texture Scale	Depth-Axis Grid
Left: 2 Right: 0.00782	
Grain Size Scales	Style: Full 💌
Very Coarse Sand 💌 to Very Fine Silt	Data-Axis Grid
Carbonte Texture Scales	Type: In
	Units:
Dip Meter Quality Scale	Linear Cycles Major Minor Increment
Left: Left:	
	Log. Cycles: 8
ОК	Cancel Help
Once a field in this Layer Configuration Tab dialogue window has been changed	the user must then click on the
Save	
button or press ALI-5.	
	ponate texture, Porosity Grade, meter layers Left and Right scale
Grain size scale Caliborate rexture scale fields	
Left: 2 Right: 0.00782 These two fields layers defined at	are used to define the scales for the pove. Any other scales are handled by
the digital curve attributes and scales The Grain size and Carbonate Texture sc verbal setting selector. On the horizontal log the left scale is the bottom and the	
Grain Size Scales Very Coarse Sand To Very Fine Silt easy way to set your grain size scale for either the Grains Size or Grain size ma	This is an Utrix layers. When this verbal selector
is utilized it will automatically set up the natural log cycles for you.	
Carbonte Texture Scales Boundstone 💽 to Clay	This is
an easy way to set your Carbonate texture scale for either the Carbonate Textu When this verbal selector is utilized it will automatically set up the linear cycles t	re or Carbonate Texture matrix layers.

This is the only way to reset the Dip Meter Quality Scale range is by utilizing this feature. The default is 0 to 1. This would depend on the data that has been imported or input manually through our report window. Quality ranges would either be 0 to 1 or 0 to 100 depending on the vendor.

The **Depth-Axis** grid represents the **X-axis** on the log (Horizontal lines on Power*Log/Core or Vertical Lines on Power*Curve). You can edit the **Depth Axis** grid or Frequency of Depth Lines and Depth Track Numbers in the **Log Configuration** window. This is located in the Edit Pull Down menu

Depth-Axis Grid	Style:	-	
		Full	'
		Ruler	

Style - Select from *Full* or *Ruler* styles for your grid lines. A Full style goes across the entire width of the layer while a Ruler style only goes partially across the layer

The **Data-Axis** grid represents the **Y-axis** on the log (Vertical lines on Power*Log/Core or Horizontal Lines on Power*Curve).

Data-Axis Grid Type:	Linear 🗾 💌	
	Linear	
	In	
	Logarithmic	

Data Axis Grid Type - Select from *Logarithmic, Linear*, and *Natural (LN)* grid types or lines. This LN type (Natural log Base 2) can only be used with the Grain Size or Grain Size Matrix Layer.

If you choose Logarithmic or LN you must fill in the number of Log Cycles. If you choose Linear you must fill in the Linear cycles or grid pattern you wish to use

on this layer.

Units: The Units field is used to display the units used in the layer header for the Grain Size, Carbonate texture, Porosity Grade, Percent and Dip meter layers.

Linear Cycles	Major	Minor	Increment
	2	5	10
laver. In this	case t	he lave	r will be divi

Linear Cycle Fields - Alters how the grid lines are displayed on a layer. You can set the occurrence of major divisions (lines) on a layer and minor divisions (lines) as well as the number of increments divisions (lines) on a particular

layer. In this case the layer will be divided in two with a major line, divided into 5 with minor lines and divided in 10 with increment lines. The grid lines styles and thickness are determined in the Log Configuration window located under the Edit pull down menu. The Scale markings numbers are dictated in this portion of the window as well. The Minor linear cycles takes precedent so in this case you would have 5 markings on the scale. The frequency of the scale is determined in the Display options tab.

Log Cycles: ⁸ Log Cycles – The number of Log cycles is directly dependent on the Scale of the curve that is represented on this layer. The system does not mandate any values and will attempt to display the curve scale with the Log Cycles entered into this field but there is no guarantee as to the correctness of the curve scale represented in the Curve Header Scale. The frequency of the scale is determined in the Display options tab.

Remember that for *Logarithmic* scales, the left and right values must be values according to the Log Based 10 (0.1, 1.0, 10.0, 100.0 etc). Therefore, if your left and right values are 0.001 and 100 respectively, then the *Log Cycle* field should have a value of **5** cycles. Moreover, if the left and right values are 1.0 and 1000 respectively, then the *Log Cycle* field should have a value of **3** cycles.

Grain Size LN (Natural Log) cycles are best determined utilizing the grain size Verbal setting selector. Otherwise to determine the left/right values and grid cycle, you should refer to the grain chart that is produced on the log legend. This will help you find out the upper (coarse) and lower (fine) limits of your Grain Sizes.

<u>For example</u>: If the lower limit is **Coarse Silt** at 0.03125mm and the upper limit is **Very Coarse Sand** at 2mm, then you should have 6 Log Cycles for the grid (on a natural log scale) and also have a LN as a Data Axis Grid Type.

Data Group ID's Tab

This tab in the layer configuration window allows the user to change the specific data groups available for each Layer type. An example is shown below:

Active Layer Configuration [Drill R	ate]	X
Layer - Display Settings Curve Definitions	Layer Scales Data Group IDs Forma	ation and Age Display Dip Meter Definitions
Save Undo		
Annotation Group	Directional Survey	Detailed Lithology Group
Generic Category	Graphics	Dip Meter Group
MDT Run No	,	,
	г	
		OK Cancel Help

Once a field in this Layer Configuration Tab dialogue window has been changed the user must then **click** on the **Save** button or press ALT-S.

Annotation Group Button

The Annotation Group... button allows you to associate an existing Annotation Group with the Annotation layer active within the Layer Configuration window at the time. Each Annotation Group has a unique Group ID as they are assigned when a new log is created for a well. So for every annotation layer that is associated with a well there is a new Annotation group created. Accordingly, if you have multiple Annotation layers associated with a single well, then you will have to assign a unique Group ID number to each of the Annotation layers within each of their respective Layer Configuration windows.

For example: "Comments" is an Annotation layer, that when a well/log was first created was assigned an Annotation Group ID of Comments1 with its own Layer Configuration window. Meanwhile, "Remarks" is another Annotation layer in that same well/log creation, that has been assigned Annotation Group ID Remarks1 within its own Layer Configuration window. If another log is created for the same well that has both a Remarks and Comments Layers they each will be assigned Group ID's of Remarks2 and Comments2. The new log will not show the same comments as the original log. You can show any group of annotations on any annotation layer and this is shown below.

Generic Category Button

You can use the Generic Category... Generic Category button only when the Data Type field displays, "Generic Category.". The user can use this button to associate a Generic Category Group and its associated data with a layer. Generic Category Groups are listed by their Name.

MDT Run Number Button

You can use the MDT Run No. ... MDT Run Number button only when the Data Type field displays, "MDT."

The user can use this button to associate a MDT Run Group Numbers and its associated data with a layer. A layer can be associated with only one MDT Run Number Group and its associated data. MDT's are listed by their Run Number and can be selected by utilizing the drop box and selecting the according number from the List. Then **click**

	I 0K	
on the		button.

Directional Survey Button

You can use the Directional Survey... Directional Survey button only when the Data Type field displays, "Directional Survey." The user can use this button to associate a Directional Survey Group and its associated points with a layer Directional Survey Groups are listed by their Start Date and their Survey Group ID. The default for any Directional Survey Layer is for it to display the Survey Group ID 1 and its associated points.

Graphics Button

The Graphics... Graphics Groups button is used, when a Graphics layer is the currently active layer within the Layer Configuration window. The Graphics Group button allows you to associate an existing Graphics Group to the currently active layer. Graphic Groups are listed by their Group Number / Name and can be

selected by utilizing the drop box and selecting the according number from the List. Then click on the	OK
button.	

Detailed Lithology Group Button

The Detailed Lithology Group... Detailed Lithology Group button is used, when a Detailed Lithology layer is the currently active layer within the Layer Configuration window. The Detailed Lithology Group button allows you to associate an existing Detailed Lithology Group to the currently active layer.

Each **Detailed Lithology Layer** added when creating new logs for a well or adding a Detailed Lithology layer/track to a log is assigned a unique **Detailed Lithology Group ID**. So for every Detailed Lithology layer that is associated with a well there is a new Detailed Lithology group created. Accordingly, if you have multiple **Detailed Lithology** layers associated with a single well, then the system will have to assign a unique **Group ID** number to each of the **Detailed Lithology** layers within each of their respective **Layer Configuration** windows.

<u>For example</u>: The First Detailed Lithology layer added to a well/log is assigned a Detailed Lithology Group ID of **Detlith1** with its own **Layer Configuration** window. Meanwhile, if another Detailed Lithology layer is added in a new log creation that will be assigned another Detailed Lithology Group ID **Detlith2.** Etc. Etc.

Dip Meter Group Button

The	Dip Meter Group	Dip Meter Group button is used, when a Dip Meter layer is the currently
active		tion window. The Dip Meter Group button allows you to associate an
existi	ng Dip Meter Group to the curren	tly active layer. Dip Meter Groups are listed by their Group Name and can be

0K

selected by utilizing the drop box and selecting the according name from the List. Then **click** on the button.

How to select a different Group to display on a layer

- 1. Click on the track containing a Multiple Group layer to make the track active (Highlighted in Green).
- 2. Click on the Edit pull down menu and select Layer Configuration or click on the Layer Configuration button on the Toolbar to activate the Layer Configuration window.
- 3. Click on the Data Group ID's Tab.
- 4. **Click** on the appropriate **Group button**. This will activate a list of all the groups that have been created for this well.
- Select the Group you wish to display on this layer by double clicking on the desired Group Name. If selected the Group Name will show in the field below the Group button in the Layer Configuration window.
- 6. Click on the Save button or press ALT-S, when you are finished.
- 7. A system message will appear telling the user "Record saved successfully. Do you wish to Exit?" **Click** on Yes

the **button** to exit the window and view your changes.

Formation Age Display Tab

This tab in the layer configuration window allows the user to change the display of the Formation in either the Long / Short / or Extended as well as the Ages layers.

Active Layer Configuration [Form	nations Expanded]		
Layer - Display Settings Curve Definitions	Layer Scales Data Group IDs	Formation and Age Display	Dip Meter Definitions
Save Undo			
Formation Display Age Display Image: Group Era Image: Formation Period Image: Member Stage Image: Display at top Display at top	Formation Long Name Display on Formation Shott Name Display or Format:		
		ОК	Cancel Help

Once a field in this Layer Configuration Tab dialogue window has been changed the user must then **click** on the Save

button or press ALT-S.

Formation Display

This portion of the window is only applicable to the Expanded Formation Track / Layer that displays the Group, Formation and Member information that is entered into the Formation Report.

Formation Display Formation Display Group – This track can be divided into as many as 3 portions. If this box is checked, indicates that the Group information will be displayed on the Formation Track / Layer. Formation – This track can be divided into as many as 3 portions. If this box is checked, indicates that the

<u>Formation</u> – This track can be divided into as many as 3 portions. If this box is checked, indicates that the Formation information will be displayed on the Formation Track / Layer.

<u>Member</u> – This track can be divided into as many as 3 portions. If this box is checked, indicates that the Member information will be displayed on the Formation Track / Layer.

Display at top – If this box is checked, indicates that the Group / Formation / Member information will be displayed at the top of the interval instead of the middle of the interval.

Age Display

Formation

Member
 Display at top

This portion of the window is only applicable to the Ages Track / Layer that displays the Era, Period/series and stage information that is entered into the Formation Report.



<u>Era</u> – This track can be divided into as many as 3 portions. If this box is checked, indicates that the Era information will be displayed on the Ages Track / Layer.

<u>Period</u> – This track can be divided into as many as 3 portions. If this box is checked, indicates that the Period information will be displayed on the Ages Track / Layer.

<u>Stage</u> – This track can be divided into as many as 3 portions. If this box is checked, indicates that the Stage information will be displayed on the Ages Track / Layer.

<u>Display at top</u> – If this box is checked, indicates that the Era / Period / Stage information will be displayed at the top of the interval instead of the middle of the interval.

The <u>Format field</u> indicates which format you wish to display the top on the log (either short name [1] or long name [2])

Format 1 indicates the Formation top with a line and its appropriate **Depth** above the line and a short form for **Age** and **Formation below the line.**

Format 2 displays the Member/Formation (in long form), along with True Vertical Depth (TVD) and Sub Sea Depth (SSL) and is typically used in the Formation Long Name Layer.

Dip Meter Definitions Tab

This tab in the layer configuration window allows the user to change the display of the Dip Meter Data on the Dip meter and hole dip layers. An example is shown below:

	Active Layer Conf	iguration [Bedding Dips]		X	
	Layer - Display Settin	gs Curve Definitions Layer Scales Data	Group IDs Formation and Age Display	Dip Meter Definitions	
	Save Undo				
	Set Color for Dips				
	0* - 180*:	Main color			
	180* - 360*	<u> </u>			
	Dip LineColo	brown			
		☑ 3D Look			
		C Quality by Size			
			ОК	Cancel Help	
Set Color for Dips Azimuth	Set Color for Di	na Arimuth coloctic		to make a color differential bat	waan dina
		bs Azimuth selection		to make a color differential bet	ween alps
180° - 360°			0- 300		
	To change a colo	or Click on the	button and this	will activate the Color Picker. C	lick on a
	-		OK		
color or Use custom	defined color pick	er and then click or	the	button.	
Dip LineColor: brown	•	Din Line Color col		ser to define the line and circle	a a la maf
the dip data so that vo				can differentiate between them	
3D Look 3D Look	check box when	activated will give th	e dot or indicator	a 3 Dimensional look rather that	an a flat
look.					
Dualitu bu Size					
reading by size rather	than a color fill lo	od Examples of be	d will allow the us	ser to identify the quality of the	aip
reading by size rather	-	-	In are shown beit	_	
	Ovalit	× A	\cap \cap	Quality	
	1% 25% 50%	75% 100%	0% 25%	50% 75% 100%	
-					
	Quality by Size che	ecked	Quality by Size	not checked	
Once a field in this La	yer Configuration	Tab dialogue windo	w has been chan	ged the user must then click o	n the
Save button or pres					
button or pres	5 ALT-5.				
Field Restriction Tak	<u>ole:</u>				
Name		30	Character	Mandatory	
Sequence Remarks		5.0 100	Numeric Character	Optional Optional	
UWI		20	Character	Optional	
Annotatior		30	Character	Optional	
Directiona		30	Character	Optional	
Depth Grid		5	Character	Optional	
Data Axis	71	15 5	Character	Optional	
Data Axis Log Cycle		5 5.0	Character Numeric	Optional Optional	
Major Line		5.0	Numeric	Optional	
Minor Line		5.0	Numeric	Optional	
Increment		5.0	Numeric	Optional	
Scale Left	,	10.5	Numeric	Optional	
Scale Right		10.5	Numeric	Optional	
Scale Unit		10.5	Numeric	Optional	
Curve ID		30	Character	Optional	
Curve Line		1.2	Numeric	Optional	
Curve Line		5	Character	Optional	
Curve Line		10	Character	Optional	
Depth Offs	set	5.2	Numeric	Optional	

Delete Generic Groups

The **Delete Generic Groups** window allows you to delete a generic group.

1. Click on the Delete Generic Groups selection located under the Edit pull down menu. This will activate the Generic Groups window shown below.

	Anyb	odies Oil Sands Log	X			
	Envi	ironment	Query			
	Dep Dep Dep diag	is e Samples o Complex o Env oostional Environment genesis	Cancel			
	Faci Faci Fiss Form Frac HAF	ies Assoc nation cture RDNESS Reaction	Delete			
2.	2. Click on the Generic Group Name that you wish to delete, and click on the Delete button. This will activate the Database Data Warning window.					
		WARNING: This could affect other logs that may use these fills! Are you sure you want to delete this Fill Group and all of it's associa Yes No	ted Fill Patterns?			
3.	Click on the	button , and the Generic Group will	be deleted.			

Generic Group Sorting – Edit pull down menu item

The **Generic Group Sorting** allows the user to view all the generic groups and order the group list into a format that is sensible to the user rather than our default that would be alphabetically.

How to sort a Generic Group List

1. Click on Generic Group Sorting, under the Edit menu selection. If any Generic Groups have been added to the Database to activate the generic group selection window shown below.

Interpretation Detailed rock type Facies Interpretation Key Horizons	Query Select Clear Field
Mudcake Perferated Intervals Sample Sedimentary structures umit Unit Number Washout	Cancel
	Delete

Select

Click once on the Group Name (Interpretation) you wish to resort and then click on the button or Double Click on the Group Name. This will activate a window that allows you to resort the Fill list as shown below.



Before Move

During Move

Result of Move

- 3. Click and drag on the Generic fill you wish to resort and move it above or below the generic fill you want it beside.
- 4. Repeat step 3 as many times as you like.
- 5. Once you have finished **Click** on the Save Ordering button.
- 6. The user can either **select a different group** by **clicking** on the **Select Group button** or you can **close this window** by **clicking** on the **Exit button**.

Toolbar – View pull down menu item

Turns the Toolbar on and off. This toolbar is dock able and can be moved to different places on the screen. We have added / removed some more shortcuts to this toolbar.


Import Toolbar – View pull down menu item

Turns the Import Toolbar on and off. This toolbar is dock able and can be moved to different places on the screen. We have added some more shortcuts to this toolbar.



Export Toolbar – View pull down menu item

Turns the Export Toolbar on and off. This toolbar is dock able and can be moved to different places on the screen.



RTF Font Toolbar – View pull down menu item

Turns the RTF Font Toolbar on and off. This toolbar is dock able and can be moved to different places on the screen. This is used with the New RTF Annotations used on the Log.



RTF Line and Boxes Toolbar – View pull down menu item

Turns the RTF Line and Boxes Toolbar on and off. This toolbar is dock able and can be moved to different places on the screen. This is used with the New RTF Annotations used on the Log.



Sample Description – Reports pull down menu item

This report allows you to describe a Sample. The long descriptions will be used in the Sample Description Report that is printed out in the Well End Report. We have added an Ascending Check box so that user can either log up or down with respect to the depth intervals.

This window will now populate the % Lithology layer if it is utilized on your log as well. This % Lithology Layer will be populated if a % (percentage) is used as well as a Rock Type is selected in the % Lithology Rock Type drop down box.

Sample Description	
Save Undo New Del First Prev ? Next Last	Dictionary
Auto Next Auto Inc IV Ascending Interval Rock Type / Heading 1 415 5 410 to 415 Dol	✓ % Remaining: 0 % 40 %
Short Description 2 Lithology: Dol [Dolomite]	To Long Desc
m bm, occly dk bm, crpxl, v arg, com rthy por (1-3%), com bm o stng, fr orng yel flor, fr s	string mky yel cut flor.
Long Description	
Dolomite	To Short Desc
medium brown, occasionally dark brown, cryptocrystalline, very argillaceous, common e common brown oil staining. Fair orange yellow fluorescence, fair streaming milky yellow r	earthy porosity (1-3%). Cut fluorescence.
Transfer Options	
✓ Automatic Description transfer Transfer to Annotation Group: lithtext5	
	Transfer Short Form

Note: If the descriptions are then transferred to the Striplog and then edited on the striplog the descriptions entered in

The **Dictionary** button activates the Geology Dictionary window that allows you to add, edit and delete abbreviations and long forms from the expansion dictionary.

The Auto Next button takes the last value saved to the Interval (To) field and places it in the Interval (From) field. Then, it places the cursor in the empty Interval (To) field and waits for the user to enter a new value.

The **Auto Inc** button adds the amount entered into the Auto Increment field (the default is 5m), to the Interval (From) and Interval (To) fields.

The 🗹	Ascending	check box when	activated will	advance the	Top Depth	n with the	Base depth	value.	This will only I	be
-------	-----------	----------------	----------------	-------------	-----------	------------	------------	--------	------------------	----

	Start New Record		Auto Next	
implemented when the record is saved and the		option is chosen and then the	Autoriticat	lor

the Auto Inc buttons are activated. If the Ascending check box is not activated the descending order will be implied and the Top depth will be place in the Base depth field.

Note: The Auto Next or the Auto Inc buttons should only be activated, when the window has been cleared. This
would mean selecting either the New button or the Start New Record in the save options window. If a Rock
Type is present in the Rock Type field, prior to using these buttons, that Rock Type and its associated data will be
associated with the new depths.

The Interval... button displays a list of descriptions that have been entered to date for the current well.

The **button** takes the correct Rock Type abbreviation and places the rock type in its associated field. If the abbreviation is not correct according to our expansion dictionary, the rock type will not be placed. Then, the user can choose the rock type from the drop down box.

The **To Long Desc** button expands the text you have typed in the Short Description field and places them in the Long Description field.

The **To Short Desc button** abbreviates the text you have typed in the **Long Description** field and places them in the **Short Description** field.

Automatic Sample Description Transfer Options

Transfer Options Automatic Description trans	fer		
Transfer to Annotation Group:	lithtext1		-
🔽 Transfer Depth Range	🔽 Top Depth Only	🔲 Transfer %	✓ Transfer Short Form

The **Automatic Description transfer** check box vertice when activated will automatically transfer the sample description to the log when it is saved. It will transfer with the options specified in the transfer Options discussed below. The **Transfer to Annotation Group** selection drop box indicates which group the description is being transferred to. This window will default to Lithtext1. If this is not the group you wish to transfer you descriptions to, select a different group from this drop box.

<u>Note</u>: The first log created for a well will have a lithology description layer identified with a group called lihtext1, the second log created for a well will have a lithology description layer identified with a group called lihtext2 etc. The user can select any annotation group that exists for that well.

The **Transfer Depth Range** check box when activated will transfer the from and to depth intervals to the log. The **Transfer Top Depth Only** check box when will transfer only the from depth interval to the log.

The **Transfer %** check box **W** when activated will transfer the rock % to the log.

The **Transfer Short Form** check box *k* when activated will transfer the short description to the log. When this selection is unchecked the samples long sample description will be transferred to the log.

Adding a Sample Description

1. Click on Sample Description, under the Reports menu selection. If any descriptions have been

entered for the current well, the last description will be displayed. **Click** on the **button**. The intervals are set to zero (**0**) and the cursor is placed in the **Interval**(From) depth field.

2. Type the **Interval** (From) and **Interval** (To) depth values into their respective fields and press the **Tab** key on the keyboard to move to the next field.

- 3. Type in the Rock Type and press the Tab key.
- 4. Type in a Percentage (%), if you require one, and Tab out of the field.
- 5. This will make the **Lithology:** button active. The user can press the Enter Key with this button active and if the Rock Type abbreviation is correct the rock type will show in its associate field. Or The
- User can **click** on the kithology: button and the rock type will show in its associate field.
- 6. If the rock type does not show in the field the user can **pick** their own rock type from the **drop down box** provided. The reason why it would not be populated is either the rock type symbol does not exist or the Short Form was not abbreviated correctly for this field to be populated. **Tab** to the Short Description field.
- 7. Type the **Short** (abbreviated) **Description** into the **Short Description** field. Note that any abbreviations that are misspelled or are not found in the **Geology Dictionary** will not be expanded.

<u>Note</u>: When you type your abbreviations in ALL CAPS, your long description will be ALL CAPS as well. Similarly, if you use all lower case letters in your abbreviations, your expanded description will be all lower case. You are also able to use capital letters to begin your abbreviations and leave the remaining letters in lower case. This will produce lower case words that are capitalized in the long description.

Note: You also have the option of typing out the non-abbreviated form of the Sample Descriptions into the Long Description field and then clicking on the To ShortDesc button to display the abbreviated form of the Sample Descriptions in the Short Description field. Moreover, you may also type out the Sample Descriptions (abbreviated or non-abbreviated), using a Window's program, such as Notepad or Word, and then Copy/Cut and Paste the Sample Descriptions into either the Short or Long Description fields within the Sample Description window.

- 8. Click on the Save button or press ALT-S.
- 9. To enter another description at the same interval, **click** on the **Start New Record button** and repeat **Steps 3** to **8**.
- 10. To add a description to a new interval, click on the **Start New Record** button or press ALT-N, then

click on the Auto Inc button or the Auto Next button, and repeat Steps 3 to 8.

<u>Note</u>: IT IS IMPORTANT TO SAVE EVERY RECORD!! You must **click** on the **button or press ALT-S** every time you finish entering a new record.

Editing a Sample Description

- 1. Use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information.
- 2. Or, **Click** on the **Interval...** button to view a list of **Sample Descriptions** and then double click on the interval that you wish to edit.
- 3. Once the selected interval is displayed in the **Sample Description** window, make any changes you feel

are necessary. **Click** on the **Save** button or press ALT-S and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Deleting a Sample Description...

- 1. Use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information.
- 2. Or, **Click** on the **Interval...** button to view a list of **Sample Descriptions** and then **double click** on the interval that you wish to delete.
- 3. Click on the Delete button.

4. The user will be prompted with a confirmation "Do you really want to delete?" Click on the

```
Yes
         button.
```

The Undo The **button** will restore the window to the settings of the last saved record. You can **Tab** between fields or press **Shift + Tab** to move backwards between fields.

Field Restriction Table:

Intervals (From & To)	7.5	Numeric	Mandatory
Rock Type	50	Character	Mandatory
Percentage	3	Numeric	Optional
Short Description	65,535	Character	Optional

For other ways on how to transfer Sample Descriptions to a log, see the "Sample/Core Description Transfer" section in Chapter Five of the User Manual.

Note: When you add any layer to a log, it is always associated with a Data Type. Every data type in Power*Log / Core & Curve has a default setting. The default settings for a Lithology Description layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the layer is active.

	cription] 🛛 🔀
Layer - Display Settings Curve Definitions Layer Sc	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Lithology Description Display Layer Name or Curve Scale on Track Show Layer on Track Display Vertical Orientation (Layer Name) Display Backup scales Display scales on non-active layers Display scales on non-active layers Display Pull Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid	Data Type: Annotation Uvvl Image: Constraint of the second se
	OK Cancel Help cription] ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Annotation Group	Directional Survey Detailed Lithology Group Graphics Dip Meter Group
Generic Category	

Core Descriptions

This report allows you to describe a Core on an interval basis. The long descriptions will be used in the Core Description Report that is printed out in the Well End Report print window. We have modified the window to get rid of some of the confusing buttons and we have added an Ascending Check box so that user can either log up or down with respect to the depth intervals.

Note: If the descriptions are entered into this Core Description report and transferred to the Striplog and then edited on the striplog the descriptions entered in this Core Description reports remain unchanged.

Core Description	- C
Save Undo New Del First Prev ? Next Last	Dictionary
Auto Next Ascending Interval Rock Type / Heading	
1003.5 1000 to 1003.5 Sh / mnr Ss lam.	
Short Description	To Long Desc
Ch is predy dit, gy, micmica, carb, sis, lis, S s lam are thm (<3mm) and are predy lit, gy, f - gy, occly vf gy, py srt, sbang - sbridd, qtz, com micas fil abrt sils cmt, com cly & pyric mtx, predy disaggd, predy lit / ns.	ks, mnr fid,
	~
Long Description	
Shale with minor Sandstone laminae.	To Short Desc
Shale is predominately dark gray, micromicaceous, carbonaceous, siliceous, fissile, Sandstone laminae are thim (.3mm) and are predominately light gray, fine to coarse grained, occasion grained, poort, soliday, and to subrounded, quartz, commo micaceous flakes, mino feldspar, siliceous cement, common clay and pyritic matrix, predominately disaggregated, predominately tight wi	abundant
Transfer Options	
Automatic Description transfer	
Transfer to Annotation Group: lithtext1	•
✓ Transfer Depth Range ✓ Top Depth Only ✓ Transfer Sho	rt Form

Dictionary button activates the Geology Dictionary window that allows you to add, edit and delete abbreviations and long forms from the expansion dictionary.

The Ascending check box when activated will advance the Top Depth with the Base depth value. This will only be

Start New Record option is chosen. If the Ascending check box implemented when the record is saved and the is not activated the descending order will be implied and the Top depth will be place in the Base depth field.

Interval... button displays a list of descriptions that have been entered to date for the current well. The .

The **To Long Desc** button expands the text you have typed in the Short Description field and places them in the Long Description field.

The To Short Desc button abbreviates the text you have typed in the Long Description field and places them in the Short Description field.

Automatic Description Transfer Options

I ransfer Uptions						
Automatic Description transfer						
Transfer to Annotation Group:	lithtext1	▼				
🔽 Transfer Depth Range	🔽 Top Depth Only	☑ Transfer Short Form				

The Automatic Description transfer check box 🗹 when activated will automatically transfer the sample description to the log when it is saved. It will transfer with the options specified in the transfer Options discussed below. The **Transfer to Annotation Group** selection drop box indicates which group the description is being transferred to. This window will default to Lithtext1. If this is not the group you wish to transfer you descriptions to select a different aroup from this drop box.

Note: The first log created for a well will have a lithology description layer identified with a group called lithtext1, the second log created for a well will have a lithology description layer identified with a group called lithtext2 etc. The user can select any annotation group that exists for that well.

The **Transfer Depth Range** check box \checkmark when activated will transfer the from and to depth interval to the log. The **Transfer Top Depth Only** check box \checkmark when activated will transfer only the from depth interval to the log. The **Transfer Short Form** check box \checkmark when activated will transfer the short description to the log. When this selection is unchecked the samples long sample description will be transferred to the log.

Adding a Core Description

- 1. Click on Core under the Reports menu selection to activate the Well Core window.
- 2. The user must fill in the Mandatory fields in the core window and save this record before you can click on **Core Description Button** in the Well Core window. If any descriptions have been entered for the current well, the last description will be displayed. Otherwise, the intervals are set to zero (**0**) and the cursor is placed in the **Interval** (From) depth field.
- 3. Type the **Interval** (From) and **Interval** (To) depth values into their respective fields and press the **Tab** key on the keyboard to move to the next field.
- 4. Type in the **Rock Type** and press the **Tab** key.
- 5. Type the Short (abbreviated) Description into the Short Description field.

Note that any abbreviations that are misspelled or are not found in the **Geology Dictionary** will not be expanded.

When you type your abbreviations in ALL CAPS, your long description will be ALL CAPS as well. Similarly, if you use all lower case letters in your abbreviations, your expanded description will be all lower case. You are also able to use capital letters to begin your abbreviations and leave the remaining letters in lower case. This will produce lower case words that are capitalized in the long description.

6. Click on the Save button or press ALT-S, and then click on the appropriate button when prompted with the Shortcut Options system window.

Note: You also have the option of typing out the non-abbreviated form of the Core Descriptions into the

Long Description field and then clicking on the **To Short Desc** button to display the abbreviated form of the **Core Descriptions** in the **Short Description** field.

7. Repeat Steps 3 to 6.

<u>Note</u>: IT IS IMPORTANT TO SAVE EVERY RECORD!! You must **click** on the **Save** button or press ALT-S every time you finish entering a new record.

Editing a Core Description

- 1. Use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information
- 2. Or, **Click** on the **Interval... button** to view a list of **Core Descriptions** and then **double click** on the interval that you wish to edit.
- 3. Once the selected interval is displayed in the **Core Description** window, make any changes you feel are

necessary. Click on the **Save** button or press ALT-S and then click on the appropriate button when prompted with the Shortcut Options system window.

Deleting a Core Description

- 1. Use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information
- 2. Or, **Click** on the **Interval... button** to view a list of **Core Descriptions** and then **double click** on the interval that you wish to delete.
- 3. Click on the Delete button.

4. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the **button**.

Field Restriction Table:

Intervals (From & To)	7.5	Numeric	Mandatory
Rock Type	50	Character	Mandatory
Short Description	63,535	Character	Optional

<u>Y</u>es

For another way on how to transfer Core Descriptions to a log, see the "*Transferring Core Descriptions*" section in Chapter Five of the User Manual.

Bit Record

Bit Record data is entered into this window.

The data entered into this window is used to generate three separate **Well End Reports**: the "*Bit Records*" report, the "*Bit Record Summary (IADC)*" report, and the "*Bit Record Summary (TBG)*" report. The "*Bit Record Summary (IADC)*" report is made up of select fields of data including: **Bit #, Make, Type, Size, Depth In, Depth Out, Drilled, Rotating Hours, Average Drill Rate,** and the **IADC Bit Grading System** fields. The "*Bit Record Summary (TBG)*" report is made up of the same fields of data, however, it also includes the **Size** and **TBG Grading System** fields.

When entering this data into the **Bit Record** window, you can save time by filling in only the information required for the **Bit Record** and **Bit Record Summary** reports, as well as the information that is displayed on the **Bit Record** layer on the log.

<u>Note</u>: The **Pump Data** tab section of the **Bit Record** window only needs to be filled in once per well. The only information required for each additional **Bit Record** is the **Pump SPM**, **Efficiency (%)**, and **Pump Output (I/min)**.

Bit Records and Relate	d Data	×				
Bit Records Pump Data Drilling Parameters Bit Grading						
Save Undo New Del First Prev ? Next Last						
Bit# 1	IADC Series Type 4 3					
Seq#	* (-1 = open, 0 = blank) * Nozzle Size: 6.4 7.1					
Make STC	Number of Nozzles: 1 2					
Type M416	Total Flow Area (mm²) 111.4					
Size 222	Rotating Hours 35					
Serial# M34256	Average Drill Rate 3.43					
Depth In: 1030	Display Depth In 📔 🛛 In Align 🕅 💌					
Depth Out: 1150	Display Depth Out 🛛 🛛 Out Align right 💌					
Drilled: 120.00	Total Rotating Hours 35					
OK Cancel Help						

Adding a Bit Record

Bit Records Tab

- 1. Click on Bit Record under the Reports menu selection.
- 2. Click on the <u>New</u> button or press ALT-N.

Note: In the event of a "plugback" or redirected well, the Seq# field can be used to override the Bit order (normally dictated by the values in the Depth Out field), so that the Bits can be kept in the proper sequence or order.

3. Enter any appropriate information into the empty fields.

Note: Please leave the Rotating Hours field blank or empty, if you wish to indicate a zero(0) value for Rotating Hours. Otherwise, you will receive an "Error in formula" error message, in the Well End Report window, when you attempt to printout the Bit Record Summary reports.

- 4. Select an alignment for the Bit In and Bit Out data to be shown on the Bit Record layer. The default alignment is to the right of the Bit Record layer. However, you can select a left, right, center, or blank alignment. If you select a blank alignment the Bit Record will not be displayed, but it will still be printed out in the Well End Report window.
- 5. The Bit In data is defaulted to display the information NB#6 WRB HR-SS5 from the depth entered into the depth in field. That can be changed by typing in a different depth in the **Display Depth In field** for the information. The bow ties will remain at the depth the bit was tripped in.

The Bit Out data is defaulted to display the information -F-16-RG-TG from the depth entered into the depth out field. That can be changed by typing in a different depth in the Display Depth Out field for the information. The bow ties will remain at the depth the bit was tripped out.

Bit#6 WRB HR-S35 237.00 / 32 hrs

Note: The Bit In information consists of Bit #, Make, and Type NB#6 WRB HR-S35, while the Bit	t Out information
	Bit#6 WRB HR-S35
	237.00 / 32 hrs
	Cond 6-6-WT-A-
consists of Bit #, Make, Type, Meters Drilled, Rotating Hours, and either Bit Grading Systems	-F-16-RG-TG

7. When you have finished adding your data, Click on the **Save** button or press ALT-S and then click on the appropriate button out of the ensuing Shortcut Options window.

Pump Data Tab

This information is stored and remembered for the entire well. You may wish to change the average strokes per minute and the output otherwise all should be good. The only Bit Record Report that utilizes this information is the Full Bit Record Report. The TBG and IADC do not utilize any of this information.

Bit Records Pump Data Drilling Parameters Bit Grading Save Undo New Del First Prev ? Next Last					
Size: Type: P Rod Diam (rm): Liner Size (rm): Stroke Len (rm): S.P.M.: Efficiency (%):	#1 500 triplex ▼ 200 245 123 20 95 13.6	#2 P354 300 triplex • 345 234 30 105 15			
			ОК	Cancel	Help

- 1. Click on the Pump Data Tab
- 2. **Tab** through the fields and **type** the appropriate information in each field.
- 3. When you have finished adding your data, Click on the **Save** button or press ALT-S and then click on the appropriate button out of the ensuing Shortcut Options window.

Drilling Parameters Tab

The only Bit Record Report that utilizes this information is the Full Bit Record Report. The TBG and IADC do not utilize any of this information.

Bit Records and Related Data 🛛 🔁				
Bit Records Pump Data Drilling Parameters Bit Grading				
Save Undo New Del First Prev ? Next Last				
F.O.B. (daN): R.P.M.: S.P.P. (kPa): Mud Den (kg/m²):		Formations Drilled Sephton, Roemer Carbonate		
		OK Cancel Help		

- 1. Click on the Drilling Parameters Tab
- 2. Tab through the fields and type the appropriate information in each field.
- 3. When you have finished adding your data, Click on the **Save** button or press ALT-S and then click on the appropriate button out of the ensuing Shortcut Options window.

Bit Grading Tab

This information is utilized in all Bit Record Reports.

Bit Records and Related Data				
Bit Records Pump Data Drilling Parameters Bit Grading				
Save Undo New Del First Prev ? Next Last				
T/B/G Bit Grading System				
Teeth Bearing	Gage (0 for in gage)			
IADC Bit Grading System				
Inner: 4	Sealed Bearings: E			
Outer: 3	(O for in gage)			
MDC: BT 💌	Gage: 0			
Location: A	Other DC: FC 💌			
Cone#:	Reason Pulled (1): BHA			
Non-Sealed Bearings:	Reason Pulled (2): CP			
Remarks: Nothing				
	OK Cancel Help			

- 1. Click on the Drilling Parameters Tab
- 2. Tab through the fields and type the appropriate information in each field.

3. When you have finished adding your data, Click on the **Save** button or press ALT-S and then click on the appropriate button out of the ensuing Shortcut Options window.

Editing a Bit Record

- 1. Click on Bit Record under the Reports menu selection.
- 2. Click on the **button** to view a list of **Bit Records** to date and then **double click** on the record that you wish to edit.
- 3. Or, use the database navigational tools **First Prev** ? Next Last to navigate through the records. See the **Database Navigational Tools** section later in this **User Manual** for more information.
- 4. Once the selected interval is displayed in the **Bit Record** window, make any changes you feel are necessary. Click on each Tab to view all the information entered for this bit.

<u>S</u> ave	

5. Click on the **button or press ALT-S** and then click on the appropriate button when prompted with the **Shortcut Options** system window.

Deleting a Bit Record

- 1. Click on Bit Record under the Reports menu selection.
- 2. Click on the button to view a list of Bit Records to date and then double click on the record that you

wisł	n to delete. Once the selected record is displayed in the Bit Record window, click on the	Delete
but	ton.	

3. Or, use the database navigational tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information. Select the record you wish

Del

Delete button.

to delete and it will be displayed in the Abandonment Plug window. Then, click on the

 The user will be prompted with a confirmation "Do you really want to delete?" Click on the <u>Yes</u> button.

Aligning All Bit Records

- 1. Make the **Bit Record** layer active within the **Drilling Progress** track by clicking on the track and then selecting the **Bit Record** layer from the **Layer Selection List** field.
- 2. Right click anywhere within the Bit Record layer to activate the pop-up menu.



3. Select IN Alignment from the pop-up menu to activate a pop out menu and select Left, Right or Center to align the bit in records accordingly.



4. Select OUT Alignment from the pop-up menu to activate a pop out menu and select Left, Right or Center to align the bit out records accordingly.



Field Restriction Table:

Bit Number	10	Character	Mandatory
Make	15	Character	Optional
Туре	10	Character	Optional
Size	5.3	Numeric	Optional
Serial Number	15	Character	Optional
IADC Series	2.0	Numeric	Optional
IADC Type	2.0	Numeric	Optional
Nozzle Size 1	2.1	Numeric	Optional
Nozzle Size 2	2.1	Numeric	Optional
Nozzle Size 3	2.1	Numeric	Optional
Nozzle Size 4	2.1	Numeric	Optional
Number of Nozzle 1	1.0	Numeric	Optional
Number of Nozzle 2	1.0	Numeric	Optional
Number of Nozzle 3	1.0	Numeric	Optional
Number of Nozzle 4	1.0	Numeric	Optional
TFA	4.1 (Calculated)	Numeric	Optional
Depth In	5.2	Numeric	Optional
Depth Out	5.2	Numeric	Optional
Display Depth In	5.2	Numeric	Optional
Display Depth Out	5.2	Numeric	Optional
Drilled	Calculated		
Rotating Hours	3.2	Numeric	Optional
Average Drill Rate	3.2	Numeric	Optional
Total Rotating Hrs	5.2	Numeric	Optional
FOB Min	6.0	Numeric	Optional
FOB Max	6.0	Numeric	Optional
RPM Min	6.0	Numeric	Optional
RPM Max	6.0	Numeric	Optional
SPP Min	6.0	Numeric	Optional
SPP Max Mud Density Min	6.0 6.0	Numeric Numeric	Optional
Mud Density Max	6.0	Numeric	Optional Optional
Funnel Vis Min	6.0	Numeric	Optional
Funnel Vis Max	6.0	Numeric	Optional
Drift Angle Min	3.3	Numeric	Optional
Drift Angle Max	3.3	Numeric	Optional
TBG Teeth	1	Character	Optional
TBG Bearing	1	Character	Optional
TBG Gage	6.0	Numeric	Optional
Pump Model (1&2)	15	Character	Optional
Pump Size (1&2)	10	Character	Optional
Pump Type (1&2)	10	Character	Optional
Pump Rod Di(1&2)	6.0	Numeric	Optional
Liner Size (1&2)	6.0	Numeric	Optional
Stroke Length (1&2)	6.0	Numeric	Optional
SPM (1&2)	6.0	Numeric	Optional
Efficiency (1&2)	3.0	Numeric	Optional
Output (1&2)	5.2	Numeric	Optional
Formations Drilled	254	Character	Optional
Annular Vel DC	6.0	Numeric	Optional
Annular Vel HWDP	6.0	Numeric	Optional
Annular Vel DP	6.0	Numeric	Optional
Bottoms Up Depth	5.2	Numeric	Optional
Bottoms Up Theor.	6.0	Numeric	Optional
Bottoms Up Actual	6.0	Numeric	Optional
IADC Inner Rows	1	Character	Optional
IADC Outer Rows	1	Character	Optional
IADC Major Dull C	2	Character	Optional
IADC Location IADC Show Cone #	1 4	Character	Optional
		Character	Optional
IADC Non-sealed B IADC Sealed Bearing	1	Character Character	Optional
IADC Sealed Bearing	6.0	Numeric	Optional Optional
IADC Gage	2	Character	Optional
IADC Other Dull C	3	Character	Optional
IADC Pulled Reasons	50	Character	Optional
			optional

POWER SUITE Addendum User Manual Version 9.0

Note: When you add any layer to a log, it is always associated with a **Data Type**. Every **Data Type** in **Power*Log / Core & Curve™** has a default setting. The default settings for a **Bit Record** layer are shown below. To access this window, **click** on the **Layer Configuration button** on the **Toolbar**, when the layer is active.

Active Layer Configuration [Bit Record]	
Layer - Display Settings Curve Definitions Layer Scales Save Undo Name: Bit Record Display Layer Name or Curve Scale on Track Fo Show Layer on Track Display Vertical Orientation (Layer Name) Display Backup scales	Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Bit Record UW/ reground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Formation

Enter the details of any Formation into this window. This information is then printed out in 3 different reports and can be place on the striplog in 4 different formats. The reports this information generates would be a Formation Top Summary, Formation Evaluation Report and the Sample Description report with Tops and the Morning Report Formation report. These reports can be printed using the Print Well End Report and the Print Morning Report windows. The Formations can also go on the striplog as a Short Name, Long Name with TVD and SSL Depths and expanded format along with the Ages. The user can also choose between showing the Prognosis, Sample or Log tops on the Striplog

Well Formation			
Save Undo New Del First Prev ? Ne Short Long	K.B. Ground Casing Flange Alignment 24.9 21.1 21.08 center •		
Group: Formation t Tidsdale	Boundary Type: conf [conformable]		
Member: Main Tidsdale Sand	Seq#: D Long Name Display Depth: Subsear -353.98		
Era Series Mesozoic 🗨 Lower	Tops MD TVD Prognosis: 370		
Period Stage K [Cretaceous] Aptian	▼ Sample: 445 378.13		
Age: I million years Thickness Calcula	te Thickness Display C Prog. © Smpl. C Log		
Evaluation: Annotations Samples To Long Desc The Main Tidsdale Sandstone was encountered fairly close to the prognosed depth at 368.11m (TVD). Intermediate casing was set at 512m (MD) or 381.05m (TVD). The horizontal section of the well extended for 525m and reached a maximum depth of 1037m (MD). The well bore stayed in a fairly narrow window (380.2 to 383.8m [TVD]) for most of the well. The well bore dropped significantly when we were unable to steer (orient) at a depth 960m (MD) when we were at an elevation of 383.8m (TVD) and dropped down to a maximum of 385.74m (TVD) at 1037m (MD). The upper limit of the hole was reached at a measured depth of 664m (MD) or 380.2m (TVD) where we encountered a significant increase in			
Conclusion:	To Long Desc		
290m of good oil pay zones. These zones should	contally for 525m and encountered at least a minimum of and will produce oil at a significant rate. The porosity of water during any of the drilling of the drain section of should be further evaluated on downhole logs.		

Adding a Formation Top

- 1. Click on Formation under the Reports menu selection.
- 2. Click on the **button or press ALT-N** and then fill in the report window with your data.
- 3. When you have finished adding your data, **click** on the **button or press ALT-S** and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Editing a Formation Top

- 1. Click on the **Formation...** button to view a list of **Formations** to date and then **double click** on the record that you wish to edit.
- 2. Or use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information.

3. Once the selected interval is displayed in the Formation window, make any changes you feel are necessary.

Click on the **Save** button or press ALT-S and then click on the appropriate button when prompted with the Shortcut Options system window.

Deleting a Formation Top

- Click on the Formation... button to view a list of Formations to date and then double click on the record that you wish to delete. Once the selected record is displayed in the Formation window, click on the button.
- 2. Or use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information. Select the record you wish

Yes

to delete and it will be displayed in the **Formation** window. Then, **click** on the **Delete button**.

3. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the **button**.

The **button** will restore the window to the settings of the last saved record.

You can Tab between fields or press Shift + Tab to move backwards between fields.

Well Formation Window - Breakdown of Fields:

Well Formation	X		
Save Undo New Del First Prev ? Ne Short Long Group:	Kt Last K.B. Ground Casing Flange Alignment 24.9 21.1 21.08 center • Boundary Type: conf [conformable] •		
Formation t Tidsdale Member: mts Main Tidsdale Sand	Fault Type:		
Era Series Mesozoic V Period Stage	Tops MD TVD Prognosis: 370		
K [Cretaceous] Aptian Age: million years Thickness			
	Annotations Samples To Long Desc		
The Main Tidsdale Sandstone was encountered fairly close to the prognosed depth at 368.11m (TVD). Intermediate casing was set at 512m (MD) or 381.05m (TVD). The horizontal section of the well extended for 525m and reached a maximum depth of 1037m (MD). The well bore stayed in a fairly narrow window (380.2 to 383.8m (TVD)) for most of the well. The well bore dropped significantly when we were unable to steer (orient) at a depth 960m (MD) when we were at an elevation of 388.0m (TVD) and dropped down to a maximum of 385.74m (TVD) at 1037m (MD). The upper limit of the hole was reached at a measured depth of 664m (MD) or 380.2m (TVD) where we encountered a significant increase in			
Conclusion:	To Long Desc		
290m of good oil pay zones. These zones should	contally for 525m and encountered at least a minimum of and will produce oil at a significant rate. The porosity of water during any of the drilling of the drain section of hould be further evaluated on downhole logs.		

<u>K.B., Ground, and Casing</u> - This information is displayed based on the **Well** information that you entered in the **Well** window. The Well window can be located under the Edit Menu Selection.

Formation...__Button - Click on the Formation... button to display the list of Formations and Sample Tops that have been entered to date. Double click on the Formation or highlight the Formation and click on the Select button to edit or view the Formation.

<u>Group, Formation, and Member (short and long)</u> - Type in the short and long name for the **Group**, **Formation**, and **Member** names. Only the **Formation** long name is a mandatory field. The short name will be added to the formation short name layer display on the log coupled with the short period name and the measured depth.



<u>Sequence Number</u> - The Seq # field can be used to override the order that the formations are printed out in the well end and morning reports.

<u>Era, Series, Period, and Stage</u> - Use the drop box methods to access the various **Eras** on the lists. Note that the **Period** chosen will affect the list in the **Stage** drop box.

Age – You may enter the estimated geological age of this formation in this field.

Thickness - You may enter the thickness of this formation into this field (or) the user can click on the

Calculate Thickness

formation and the next formation in the list.

Note: When the Thickness field is filled in with the measured depth thickness of the formation you will be able to generate a sample description report with formation tops that will contain all your sample descriptions.

Торз	MD	TVD
Prognosis:		370
Sample:	445	378.13
Log:	447	378.88

<u>Tops Depth section -</u> You may enter the **Measured Depths** and **True Vertical Depths** in these fields. If you have entered survey point data and have filled in or calculated the TVD fields and you have a survey point above and below the depth of this formation the True Vertical depths will be calculated for the user.

Note: Formations are normally ordered by their depths starting with Log Tops

TVD, then MD followed by Sample Top TVD, then MD and lastly by Prognosis Tops TVD in all the well end and morning reports where the tops are generated.

<u>Subsea</u> - This is calculated from the depths entered in the **Tops** section and the **K.B.** elevation that you entered in the **Well** window.

Subsea is calculated successively using the following data respectively: Prognosis depth, Sample Top (MD), Sample Top (TVD), Log Top (MD), and finally Log Top (TVD).

<u>Alignment</u> - This is used to align the Formation Top in a Formation (long name) layer, using Format 2 in the Layer Configuration window. The following choices are available from this drop box: Left, Middle, Right, and Blank. Leave this box blank, if you don't want the Formation Top to be shown on the layer, but still want the Formation Top to be printed out via the Well End Report window. If you are using the Formation layer in more than one track, you should beware of layer overlapping. You will discover which the best alignment for all layers is. You have one selection for all layers using this format.

Long Name Display Depth field is defaulted to empty (Display Long name data at the sample top measured depth). The user can change the display depth for the Long Name by typing in a depth in this field.



Display Options on the tops allows the user to show the Prognosis top, the Sample top or the Log top on the Log. This applies to all the display options on the Formations and Ages Layers

Samples Button - Click on the **Samples** button to activate the Transfer Sample Description window from which you may copy Sample/Core Descriptions into either the Evaluation and/or Conclusion fields. See "Copying a Sample/Core Description" in the Table of Contents for more information.

Annotations

Annotations

Button – Click on the Button to activate the Transfer Annotations window from which you may copy Lithology Descriptions into either the Evaluation and/or Conclusion fields. See "Transfer *annotation*" in the Table of Contents for more information.

Evaluation - Type in the Formation Evaluation pertaining to the lithology, etc.... You may use the short forms and

then click on the **Long Desc** button to lengthen the descriptions.

Conclusion - Type in the Formation Conclusion pertaining to hydrocarbon potential. You may use the short forms

and then click on the **To Long Desc** button to lengthen the descriptions.

Field Restriction Table:

Group (short)	5	Character	Optional
Group	30	Character	Optional
Formation (short)	5	Character	Optional
Formation	30	Character	Mandatory
Member (short)	5	Character	Optional
Era	30	Character	Optional
Series	30	Character	Optional
Period	30	Character	Optional
Stage	30	Character	Optional
Age	7.3	Numeric	Optional
Boundary Type	30	Character	Optional
Fault Type	30	Character	Optional
MD Sample	5.2	Numeric	Optional
MD Log	5.2	Numeric	Optional
TVD Prognosis	5.2	Numeric	Optional
TVD Sample	5.2	Numeric	Optional
TVD Log	5.2	Numeric	Optional
Evaluation	40000	Character	Optional
Conclusion	40000	Character	Optional
Thickness	10.5	Numeric	Optional

<u>Note</u>: In order to have the **Formation Evaluation** report printed, there are two fields that must be filled in: **Boundary Type** and **Period**. If these fields are left blank, the **Formation Evaluation Report** for that **Formation** will **NOT** be printed.

<u>Note</u>: Format 1 displays Period (short name), Formation (short name field), a Bedding Line, and the last two digits of the Sample Top.

Format 2 gives the **Formation Name** in long form True Vertical Depth **TVD** and Sub Sea Value **SSL**. This format data can be viewed in the Layer Configuration window with Formation data types. The Display depth field will only alter the Long Name format.

Also, the Ages (Era / Period / Stage) [Ages Track] as well as tops (Group / Formation / Member) [Formations Track] can be displayed along the log.

Formation Tops are automatically generated in the Morning Report from the Formation Tops that are entered into the Well Formation window. The depths entered into the Morning Report window are used to generate the Morning Formation Top report list. However, before a list can be generated, two (2) reports must be filled in to initiate a range. If your Sample Tops are located between these two (2) depths, the Formation Tops will then come out in the Morning

<u>Note</u>: When you add any layer to a log, it is always associated with a **Data Type**. Every **Data Type** in **Power*Log** / **Core & Curve™** has a default setting. The default settings for a **Formations** layer are shown below. To access this Layer Configuration button on the Toolbar, when the Formations layer is active. window, click on the figuration [For Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Ace Display Dip Meter Definitions Layer - Display Settings | Curve Definitions | Layer Scales | Data Group IDs Formation and Age Display | Dip Meter Definitions | Save Undo Data Type: Save Undo UWL. For ng Name Display on Layer Format 2 Display Layer Name or Curve Scale on Track Foreground Color: black Ŧ e Display on Layer Format F Era F Period Stage Show Layer on Track Format 1 Depth Offset Formation Member Display Vertical Orientation (Layer Name) Display Scale Placements Display Backup scales Display a Display at top Every Start at: Display scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid OK Cancel Help Format 1: Short Names Format 2: Long Names <u>Note</u>: When you add any layer to a log, it is always associated with a **Data Type**. Every **Data Type** in **Power*Log** / **Core & Curve™** has a default setting. The default settings for a **Formation** layer are shown below. To access this

window, **click** on the Layer Configuration button on the Toolbar, when the Formation layer is active and then click on the Formation and Age Display Tab.

Active Layer Configuration [Forn	nation Tops]
Layer - Display Settings Curve Definitions	Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo	
Formation Display Age Display ✓ Group ✓ Formation ✓ Member ☐ Display at top	Formation Long Name Display on Layer Format 2 Formation Short Name Display on Layer Format 1 Format
	OK Cancel Help

Note: When you add any layer to a log, it is always associated with a Data Type. Every Data Type in Power*Log / Core & Curve™ has a default setting. The default settings for an Ages layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the Ages layer is active and then click on the Formation and Age Display Tab.

Morning Report

This window gathers information to include in your Morning Reports. Simply enter the requested criteria into the window and then this information can be printed out, using the Print Morning Report window. This report is combined with the Lithology information to give you the Summary and Lithology Reports.

This is the Morning Report window:

Morning Rep	ort				×
Save Undo	New Del Fi	st Prev ? N	ext Last L	ithologies Gas	
Date Sep	27, 2001 - N	forning Depths – MD: 1410 TVD: 1409		700 hrs	
Hours Drilling:	21.7 Daily 0		Accum	.Cost	
Formation: Operational Status:	Dowson Bay Drilling			×	
Operational Summary:	Drill, surveys			<	
Report From: Report To: Remarks:	Bob Sephton Homer McDona	ld		<	

Adding a Morning Report

1. Click on Morning Report under the Reports menu selection.

2. Click on the **button or press ALT-N** and then fill in the report window with your data.

Note: If the Directional Survey points are already calculated, the Morning Depth [TVD] field will be calculated as soon as you type in a value in the Morning Depth [MD] field. Otherwise, the Morning Depth [TVD] field will show the same value that has been typed in the Morning Depth [MD] field.

3. When you have finished adding your data, **click** on the **Save button or press ALT-S** and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Editing a Morning Report

- 1. Click on the **button** to view a list of **Morning Reports** classified by date and then **double click** on the record that you wish to edit.
- 2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information.
- 3. Once the selected interval is displayed in the **Morning Report** window, make any changes you feel are

necessary. **Click** on the **Save** button or press ALT-S and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Deleting a Morning Report

1. Click on the **Date...** button to view a list of **Morning Reports** classified by date and then **double click** on the record that you wish to delete. Once the selected record is displayed in the **Morning Report** window, **click** on

the Del Delete button.

2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information. Select the record you wish

to delete and it will be displayed in the **Morning Report** window. Then, **click** on the **Delete button**.

3. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the **button**.

<u>Y</u>es

Undo

The **button** will restore the window to the settings of the last saved record.

You can Tab between fields or press Shift+Tab to move backwards between fields.

Field Restriction Table:

Date	DATE FORMAT	Default=Current Date	Mandatory
Morning Depth	5.2	Numeric	Mandatory
Morning Depth (TVD)	5.2	Numeric	Optional
Morning Depth (SSL)	5.2	Numeric	Optional
Report Time	4.0	Default=800 Hrs	Optional
Hours Drilling	2.1	Numeric	Optional
Daily Cost	8.2	Numeric	Optional
Formation	50	Character	Optional
Operational Status	40000	Character	Optional
Operational Summary	40000	Character	Optional
Remarks	40000	Character	

Lithology Summary

This is the window that appears when you **click** on the **Lithologies button**. This information can be printed out in the Morning Report. The Lithology Report is combined with the Morning Report to give you a Summary and Lithology Report.

Lithology Summary on Mar 11, 2008	
Save Undo New Del First Prev ? Next Last	Annotations
Interval 900 to 1100	Sample Descriptions
Lithology Description:	To Long Desc
1	^
	~

The **Annotations** button gets you to the Transfer Annotations window. Here the user can transfer single or multiple lithology descriptions or annotations from their striplog into their AM Lithology Summary report.

The Descriptions button gets you to the Transfer Sample Description window. Here the user can transfer single or multiple sample descriptions into their AM Lithology Summary report.

The **To Long Desc** button expands the abbreviated text you have typed in the Lithology Description field.

Adding a Lithology Summary

- 1. Click on Morning Report under the Reports menu selection. Then click on the Lithologies button to activate the Lithology Summary window shown above.
- 2. Click on the **button or press ALT-N** and then fill in the report window with your data.
- 3. When you have finished adding your data, **click** on the **Save button or press ALT-S** and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Transferring a Sample/Core Description into the Morning Lithology Report See "Transferring a Sample/Core Description" on the following page for more information.

Editing a Lithology Summary

- 1. Click on the **button** to view a list of Lithology Summaries to date and then double click on the record that you wish to edit.
- 2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information.
- 3. Once the selected interval is displayed in the **Formation** window, make any changes you feel are necessary.

Click on the **Save** button or press ALT-S and then click on the appropriate button when prompted with the Shortcut Options system window.

Deleting a Lithology Summary

1. Click on the **button** to view a list of Lithology Summaries to date and then double click on the record that you wish to delete. Once the selected record is displayed in the Lithology Summary window, click

on the **Delete button**.

2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information. Select the record you wish

Del

Yes

Delete button.

to delete and it will be displayed in the Lithology Summary window. Then, click on the

 The user will be prompted with a confirmation "Do you really want to delete?" Click on the button.

The **button** will restore the window to the settings of the last saved record.

You can Tab between fields or press Shift+Tab to move backwards between fields.

Field Restriction Table:

Top Depth	5.2	Numeric	Mandatory
Base Depth	5.2	Numeric	Optional
Lithology Description	40000	Character	Optional

Transferring a Sample Description

Sample

- 1. Click on the Descriptions button, in the Lithology Summary or the Well Formation window, to activate the Transfer Sample Description window.
- 2. If you want to transfer Core Descriptions activate the Core Descriptions check box and you will see your core descriptions.

Transfer Sample Descriptions
130m - 135m: Sh: gn, bk red, mot in pt, micmica, occly aren & stly, n calcs, stl, t 130m - 135m: Cmt from sfc csg cmt job. 135m - 140m: Sh: a. 140m - 145m: Sh: It gn, It gy, pt, red brn, mot, aren & stly ip, occly micmica, stl, s 140m - 145m: Sh: It gn, It gn, pt, pt, stbang - sbrdd, qtz, mnr fld, tr lit grs, abnt 145m - 150m: Sh: It gy, It gn, stly calcs, v stly & aren, stl, sbris. 145m - 150m: Sh: It gy, It gn, stly calcs, v stly & aren, stl, sbris. 150m - 155m: Sh: It gn, It bn, bk red, stly calcs, micmica, occly stly, aren, stl, bll 150m - 155m: Sh: It gn, It bn, bk red, stly calcs, micmica, occly stly, aren, stl, bll 150m - 155m: Sh: It gn, It bn, bk red, mot, stly calcs, micmica, stly & sdy, stl, sbf 160m - 165m: Anhy: wh, clr, cy xln, stl, dns, nvhs. 160m - 165m: Sh: It gn, It bn, bk red, mot, stly calcs, micmica, stly & sdy, stl, sbf 160m - 165m: Sh: It gn, It bn, bk red, mot, stly calcs, micmica, stly & sdy, stl, sbf 160m - 165m: Sh: It gn, It bn, bk red, mot, stly calcs, micmica, stly & sdy, stl, sbf
▼ Transfer Depth Range 🔲 Transfer % 🦳 Core Descriptions
Left Click to select a single annotation
Hold the CTRL Key down to select multiple annotations
Hold the SHIFT Key down to select a range of annotations Select All
Alternate Range Selection OK
Cancel

3. To transfer a **single description Click** on a **Description** to highlight the description in this window and then

click on the button. This will place the description in the Lithology Summary Window. Or, to transfer multiple description, Click on a Description in this window then hold down the CTRL Key and click

on subsequent **descriptions** to highlight them. Then **click** on the **DK button**. This will place all the descriptions in the Lithology Summary Window

4. To Transfer a **range of descriptions Click** on a Description in this window then **hold down** the **SHIFT Key** and **click** on the last **descriptions** to highlight the entire range. You can also **hold down** the **CTRL Key** and **click** on **OK**

subsequent **descriptions** to highlight them. Then, **click** on the **button**. This will place all the highlighted descriptions in the Lithology Summary Window.

OR the Alternate Range Selection Utility

- 1. Or **click** on the **<u>From.</u> button** to select the starting depth of the <u>first</u> interval that you wish to transfer.
- 2. Click on the **button** and select the starting depth of the <u>last</u> interval to be transferred.
- 3. Then **click** on the **button**. This will place all the highlighted descriptions in the Lithology Summary Window.

Lithology Summary on Mar 11, 2008	×
Save Undo New Del First Prev ? Next Last Interval 665 to 770	Annotations Sample Descriptions
Lithology Description:	To Long Desc
665 - 697m Ss: It gy, It gy brn, m - c gr, occly v c gr, modly w sbrdd, qtz, occ mica flks, tr fld, tr chlor, sl trs dolic cmt, predly est intgram por (16-20%), tr ptch brn o stng, bri yel flor, g insts yel cut flor. 697 - 701m Dol: It brn, micxl, arg, slty & aren, dns, nvhs. 701 - 743m Ss: It gy, It brn, m - c gr, w srt, sbang - sbrdd, qtz, flks, tr fld, tr chlor, sl trs dolic cmt, predly disaggd, g est intgrau (18-24%), ptch brn o stng, bri yel flor, g insts stmg mky yel cut 743 - 745m Dol: It brn, micxl, ally arg, slty, dns, nvhs. 745 - 770m Ss: It gy, It gysh brn, f - c gr, modly w srt, sbang - com micas flks, mr fld, tr chlor, trs dolic & sils cmt, tr cly mtx, disaggd, g est intgran por (18-24%), com brn o stng, bri yel flo yel cut flor.	disaggd, g stmg mky com micas n por flor. sbrdd, qtz, predly

- 5. Type in the From and To Interval fields in this Lithology Summary window.
- 6. Click on the **To Long Desc** button if you want the abbreviated descriptions expanded to a long form.
- 7. Click on the **Shortcut Options** system window.

Transferring Lithology Descriptions from the Striplog

- 1. Click on the Annotations button, in the Lithology Summary or the Well Formation window, to activate the Transfer Sample Description window.
 - To Select a different Annotation group lithtext1 and Click on the down arrow and select from any group associated with your log. The default group is lithtext1.
 - If the User has not transferred or utilized any Depths on the striplog you may want to activate the

Add Depth check box to add the depth where the annotation is found on the log.

Transfer Annotations	×
Select Annotation Group	
lithtext1	
🧮 Add Depth	
 685 - 690m Ss: It gy, f - c gr, modly w srt, sbang - sbrdd, qtz, com micas flks, tr fld 690 - 695m Ss: It gy, f - c gr, modly w srt, sbang - sbrdd, qtz, com micas flks, tr fld 695 - 700m Sot It gy, f - c gr, modly w srt, sbang - sbrdd, qtz, com micas flks, tr fld 700 - 705m Ss: It gy, It brn, m - c gr, occ vc gr, modly w srt, sbang - sbrdd, qtz, com micas flks, tr fld 710 - 705m Ss: It gy, It brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, com micas flks, tr fld 710 - 705m Ss: It gy, It brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, com micas 715 - 720m Dot It brn, micxl, arg, aren & slty, dns, nvhs. 715 - 720m Ss: It gy, It brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, com micas 1715 - 720m Ss: It gy, It gysh brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, n 725 - 730m Ss: It gy, It gysh brn, m - vc gr, modly w srt, sbrdd, qtz, comly micas, n 735 - 740m Ss: It gy, It gysh brn, m - c gr, w srt, sbang - sbrdd, qtz, comly micas, n 735 - 740m Ss: It gy, It gysh brn, m - c gr, w srt, sbang - sbrdd, qtz, comly micas, n 740 - 745m Dot It brn, micxl, sly arg, sly, dns, nvhs. 740 - 745m Ss: It gy, It gysh brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, n 740 - 745m Ss: It gy, It gysh pr, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 740 - 745m Ss: It gy, It gysh pr, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 755 - 750m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 755 - 750m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 755 - 750m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 755 - 750m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 755 - 750m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 756 - 750m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 760 - 755m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, q	
Left Click to select a single annotation Select All	1
Hold the CTRL Key down to select multiple annotations	Ī
Hold the SHIFT Key down to select a range of annotations	

4. To transfer a **single annotation**, **Click** on an **annotation** to highlight the annotation in this window and then click

on the **DK** button. This will place the annotation in the Lithology Summary Window. Or, to transfer **multiple annotation, Click** on a annotation in this window then **hold down** the **CTRL Key** and **click** on

subsequent annotations to highlight them. Then **click** on the **DK button**. This will place all the annotation in the Lithology Summary Window

5. To Transfer a **range of annotation Click** on a **annotation** in this window then **hold down** the **SHIFT Key** and **click** on the **last annotation** to highlight the entire range. You <u>can also **hold**</u> **down** the **CTRL Key** and **click** on

subsequent **annotations** to highlight them. Then, **click** on the **DK button**. This will place all the highlighted annotations in the Lithology Summary Window.

Lithology Summary on Mar 11, 2008	×
Save Undo New Del First Prev ? Next Last	Annotations
Interval 665 to 770	Sample Descriptions
Lithology Description:	To Long Desc
665 - 697m Ss: It gy, It gy brn, m - c gr, occly v c gr, modly w sbrdd, qtz, occ mice flks, tr fld, tr chlor, sl trs dolic cmt, predly est intgran por (16-20%), tr ptch brn o stng, bri yel flor, g insts yel cut flor. 697 - 701 m Doi: It brn, micxl, arg, sly & aren, dns, nvhs. 701 - 743m Ss: It gy, It brn, m - c gr, w str, sbang - sbrdd, qtz, flks, tr fld, tr chlor, sl trs dolic cmt, predly disaggd, g est intgra (18-24%), ptch brn o stng, bri yel flor, g insts stng mky yel cut 743 - 745m Doi: It brn, micxl, sly arg, sly, dns, nvhs. 745 - 770m Ss: It gy, It gysh brn, f - c gr, modly w str, sbang - com micas flks, mnr fld, tr chlor, trs dolic & sils cmt, tr cly mtx, disaggd, g est intgran por (18-24%), com brn o stng, bri yel flor yel cut flor.	disaggd, g stmg mky . com micas n por t flor. sbrdd, qtz, predly

- 8. Type in the From and To Interval fields in this Lithology Summary window.
- 9. Click on the **To Long Desc** button if you want the abbreviated descriptions expanded to a long form.
- 10. Click on the **Shortcut Options** system window.

Gas

Gas Summary

This is the window that appears when you **click** on the each report date, in the **Morning Report**.

button. The **Gas** information can be printed out, for

<u>Note</u>: All gasses are entered in percentage (%) form and the **C4's** and **C5's** will be totaled for you in the final **Morning Gas Report**

Gas Sur	nmary or	i Jun 16	, 2004					X
<u>S</u> ave	Save Undo New Del First Prev ? Next Last							
Interval.	Interval 1000 to 1010							
	Total Gas	C1	C2	C3	iC4	nC4	iC5	nC5
Min. (%):	3.45	2.34	1.23	0.678	0.234	0.231	0.324	0.342
Max. (%):	6.78	4.24	3.45	0.99	0.567	0.435	0.547	0.549
Remarks	Formation may well p	gas comin produce oil	g from the S at a signific	Sunburst, Ci ant rate.	ould be of g	reat importa	ince and th	is zone 🔨

Adding a Gas Summary

- 1. Click on Morning Report under the Reports menu selection. Then click on the Gas Summary window shown above.
- 2. Click on the **button or press ALT-N** and then fill in the report window with your data.
- 3. When you have finished adding your data, **click** on the **Save button or press ALT-S** and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Editing a Gas Summary

Interval...

- 1. Click on the **button** to view a list of **Gas Summaries** to date and then **double click** on the record that you wish to edit.
- 2. Or Use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information.
- 3. Once the selected interval is displayed in the **Gas Summary** window, make any changes you feel are necessary.

Click on the **Save** button or press ALT-S and then click on the appropriate button when prompted with the Shortcut Options system window.

Deleting a Gas Summary

1. Click on the **button** to view a list of **Gas Summaries** to date and then **double click** on the record Del

that you wish to delete. Once the selected record is displayed in the Gas Summary window, click on the Delete button.

2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information. Select the record you wish

to delete and it will be displayed in the Gas Summary window. Then, click on the

Delete button.

Del

 The user will be prompted with a confirmation "Do you really want to delete?" Click on the button.

The **Undo** button will restore the window to the settings of the last saved record.

You can **Tab** between fields or press **Shift+Tab** to move backwards between fields.

Field Restriction Table:

Top Depth	5.2	Numeric	Mandatory
Base Depth	5.2	Numeric	Optional
All fields	3.3	Numeric	Optional
Remarks	40000	Character	Optional

MDT Report Window – Reports pull down menu item

MDT Report window information is entered into the window shown below. This information fills in the header of the MDT Test report. The indications for the MDT Test Locations are handled through the MDT Data Entry windows. The MDT Run #1 is added automatically when you add the MDT Layer to your striplog.

The actual **MDT Data** is entered through the **Data... button**, located in the upper right side of the MDT Runs Window. . The values can be entered into the report manually or can be imported through the Import MDT Data Utility. *Refer to Import MDT Data Utility*

MDT Runs	\mathbf{X}
Bun No.	Next Last Data
Service Company	Remarks
AAA Testing & Logging Company	This was run after looging the 2nd run and proved out some potential in the Red Sky Zone.
Service Representative	Ran Casing after these test.
Freddy Whynott	
Tool Type	
Advanced MDT	
Date	
Sep 11, 2008	
Geologist	
Manny Mendez	
	Exit

Adding a MDT Run

- 1. Click on MDT, under the Reports menu selection, to activate the MDT Runs window.
- 2. Click on the New button or press ALT-N.
- 3. Type in the Run Number Field press the Tab key to advance the cursor to the next field.
- 4. **Type** and **Tab** between all the fields and Fill in the appropriate information.
- 5. When you have finished entering your data, **click** on the **Save button or press ALT-S** and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Editing a MDT Run

Run No.

- 1. Click on the drop box to view a list of MDT Runs to date and then click on the record that you wish to edit.
- 2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information.
- 3. Once the selected interval is displayed in the **Sidewall Core Runs** window, make any changes you feel are

necessary. Click on the **Source button or press ALT-S** and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.

Deleting a MDT Run

Run No.	
1	

1. Click on the drop box to view a list of MDT Runs to date and then click on the record that you

wish to delete. Once the selected record is displayed in the **MDT Runs** window, **click** on the **Delete button**.

2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information. Select the record you wish

to delete and it will be displayed in the **MDT Runs** window. Then, **click** on the

Delete button.

Del

3. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the **button**.

Field Restriction Table:

Run Number	4	Numeric	Mandatory
Service Company	160	Character	Optional
Service Representative	160	Character	Optional
Tool Type.	254	Character	Optional
Date	DATE FORMAT	Default=Current Date	Optional
Geologist	60	Character	Optional
Remarks	40,000	Character	Optional

MDT Data Window

This report allows you to enter MDT Data manually or view the data once it has been imported through the Import MDT Data Utility. The MDT locations can be viewed on the MDT layer.



Adding an MDT record manually

- 1. Click on MDT under the Reports menu selection.
- 2. Click on the **Data...** button. This will activate the MDT Data window.

MDT Data [Run #1]				
Save Und	lo New De	H First Pr		ext Last Display Depth
Seq. No.	MD	TVD	SSL	EFW
1	202	202	799	0.995
Hydrostat Before 2500.77	ic Pressure After 2002.44	Formation Pressure	Temp 67.1	Mobility 720.41028
Formation	,	,	,	
Red Sky Fo	rmation			
Comment				
All DK, Pressures quite good.				
				Exit

- 3. Click on the button or press ALT-N and then fill in the report window with your data.
- 4. When you have finished adding your data, **click** on the **Shortcut Options** system window.

Editing MDT Data

- 1. **Click** on the **List button** to view a list of MDT Data to date and then **double click** on the record that you wish to edit.
- 2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information.
- 3. Once the selected interval is displayed in the **Core Plug** window, make any changes you feel are necessary.

Click on the **Source** button or press ALT-S and then click on the appropriate button when prompted with the Shortcut Options system window.

Deleting MDT Data

1. Click on the List button to view a list of MDT Data to date and then double click on the record that you

wish to delete. Once the selected record is displayed in the **Core Plug** window, **click** on the **Delete button**.

2. Or, use the Database Navigational Tools First Prev ? Next Last to navigate through the records. See the Database Navigational Tools section later in this User Manual for more information. Select the record you

wish to delete and it will be displayed in the Core Plug window. Then, click on the

3. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the **<u>Yes</u> <u>button</u>**.

The **Undo button** will restore the window to the settings of the last saved record.

You can **Tab** between fields or press **Shift + Tab** to move backwards between fields. <u>Field Restriction Table:</u> Del

Delete button.

POWERSUITE Addendum User Manual Version 9.0

Seq No.	4	Numeric	Mandatory
Depth (MD)	10.4	Numeric	Mandatory
Depth (TVD)	10.4	Numeric	Optional
Depth (SSL)	10.4	Numeric	Optional
Display Depth (MD)	10.4	Numeric	Optional
EFW Estimated Fluid Weight	10.4	Numeric	Optional
Hydrostatic Pressure Before	10.4	Numeric	Optional
Hydrostatic Pressure After	10.4	Numeric	Optional
Formation Pressure	10.4	Numeric	Optional
Temperature	10.4	Numeric	Optional
Mobility	10.4	Numeric	Optional
Formation	254	Character	Optional
Comments	40,000	Character	Optional

<u>Note</u>: When you add any layer to a log, it is always associated with a **Data Type**. Every data type in **Power*Log / Core & Curve** has a default setting. The default settings for a **MDT** layer are shown below. To access this window,

click on the Layer Configuration button on the Toolbar, when the layer is active.

Active Layer Configuration [MDT Data]	
Layer - Display Settings Curve Definitions Layer Scales D. Save Undo	ata Group IDs Formation and Age Display Dip Meter Definitions Data Type: MDT Data
Image: Second State State Image: Second State State Image: Second State State Image: Second State State Image: Second State State Image: Second State Image: Second State State Image: Second State Image: Second State<	IWI
 ☐ Display Full Logarithmic Scale ☐ Display Depth-Axis Grid ☐ Display Data-Axis Grid 	
	OK Cancel Help

Sample / Core Description Transfer - Options pull down menu Item

This utility can be used to transfer Sample and Core Descriptions entered into the Sample and Core Description Report windows to an annotation layer on the log.

Sample / Core Description Transfer
Save Undo New Del First Prev ? Next Last List 1030 to 1035 Ss 100 %
It gy, It gysh brn, m - c gr, occly vc gr, modly w srt, sbang - sbrdd, qtz, com micas flks, mnr fld, occ trs sils cmt, predly disaggd, g est intgran por (18-24%), com - abnt brn o stng, bri yel flor, g insts mky yel cut flor.
Selections for Multiple Description Transfer (Uncheck for Multi-Transfer) From 0 to 0 Core Section Core Section
 ✓ Transfer Depth Range ✓ Transfer % ✓ Transfer Short Form ✓ Top Depth Only

The **List...** button activates a list of all descriptions that are entered into the current well.

The **From...** and **to...** buttons allow you to select an interval or range of **Sample** or **Core Descriptions** to be

transferred. If you utilize these buttons, the user must deactivate (uncheck) the **Single Transfer** check box . You may also then disregard whatever information is being displayed within the **Interval** (From), **Interval** (To), and the **Description** fields. See "*Transferring Multiple Sample Descriptions*" on the following page.

When activated, the **Single Transfer** check box **v** only allows for the transfer of the single description currently being displayed within the **Sample/Core Description Transfer** window.

When the Single Transfer is deactivated (unchecked) it will allow the user to transfer Multiple Descriptions to the log The **Core Section** check box , when activated, sets the display scale of the **Descriptions** selected to be transferred onto the **Lithology Description** layer to **1:120**.

<u>Note</u>: The Core Section check box does <u>not</u> have to be activated (checked) in order to transfer a Core Description to the log. It is only used to modify the display scale from 1:240 to 1:120 in order to limit the overlapping of descriptions within the standard 1:240 log scale.

The **Transfer Depth Range** check box \checkmark when activated will transfer the **From** and **To Depth Interval** to the log. The **Transfer %** check box \checkmark when activated will transfer the rock % to the log.

The **Transfer Short Form** check box *k* when activated will transfer the short description to the log. When this selection is unchecked the samples long sample description will be transferred to the log.

The **Top Depth Only** check box is when activated will transfer the only the **From Interval** (or Top of the interval described) to the log.

Transferring one Sample Description

Sample / Core Description Transfer	×
Save Undo New Del First Prev ? Next Last 1030 to 1035 Ss Ss <td>List</td>	List
It gy, It gysh brn, m - c gr, occly ve gr, modly w stt, sbang - sbrdd, micas fiks, mnr fid, occ trs sils cmt, predly disaggd, g est intgran p (18-24%), com - abnt brn o stng, bri yel flor, g insts mky yel cut flo	nor
Selections for Multiple Description Transfer From 0 to 0 Sing	Multi-Transfer) gle Transfer e Section
 ✓ Transfer Depth Range ✓ Transfer % ✓ Transfer Short Form ✓ Top Depth Only 	

- Click on Sample/Core Description Transfer, under the Options menu selection, or click on the Sample/Core Description Transfer button on the Toolbar to activate the Sample/Core Description Transfer window, which will then display the last description entered into the current well.
- 2. Use the **database navigational tools** First Prev ? Next Last to navigate through the records.
- 3. Or, Click on the **button** within the **Sample/Core Description Transfer** window to activate the **Sample/Core Description List** window. Then, **double click** on the desired description within the **Sample/Core Description List** window in order to display it in the **Sample/Core Description Transfer** window.
- 4. OR Click on the **button** to enter query mode. The **Depth** and **Rock Type** text fields will become red.

Type in either a depth value or rock type where you want to start a query from, and **click** on the **Start Query** button. This will refresh the window with all the records starting from the depth value or rock type that you have just entered. Then, use the database navigational tools to navigate through the records.

 Once the description is displayed within the Sample/Core Description Transfer window, click once on a spot on the active Lithology Description layer, on the Lithology Description track, where you want the Sample Description to be placed.

Transferring Multiple Sample Descriptions

 Click on Sample/Core Description Transfer, under the Options menu selection, or click on the Sample/Core Description Transfer button on the Toolbar to activate the Sample/Core Description Transfer window, which will then display the last description entered into the current well.

Sample / Core Description Transfer	×
Save Undo New Del First Prev ? Next Last 1030 to 1035 Ss 1000	List
It gy, It gysh brn, m - c gr, occly vc gr, modly w srt, sbang - sbrdd, qtz, micas flks, mm fld, occ trs sils cmt, predly disaggd, g est intgran por (18-24%), com - abnt brn o stng, bri yel flor, g insts mky yel cut flor.	com 🗻
Selections for Multiple Description Transfer (Uncheck for Multiple Transfer Single Transfer Single Transfer Core Sec	ansfer
 ✓ Transfer Depth Range ✓ Transfer % ✓ Transfer Short Form ✓ Top Depth Only 	

- 2. Click on the **From...** button to select the starting depth of the <u>first</u> interval that you wish to transfer.
- 3. Click on the **button** and select the starting depth of the <u>last</u> interval to be transferred.
- 4. Deactivate the **Single Transfer** check box
- 5. Click on the desired spot within the Lithology Description layer where you want the first description transferred and the following system message will be activated, "Do you really want to transfer sample / core text between _ and _ to the log starting at _?"

If the depths outlined in the system message are <u>correct</u>, then **click** on the <u>Yes</u> button and the Sample Descriptions will be transferred to the log.

Note: The depth difference between the position of the first description and the actual start depth interval of the first description will remain constant for the entire range of your current transfer. If there are multiple descriptions for one interval they will be placed on the log one meter apart in descending order of percentage, or alphabetically if percentage was not used in the original sample/core descriptions. These can be edited later in the **Annotation** window.

Editing Previously Transferred Sample Descriptions

<u>Note</u>: The user must first close down the Sample Core Description Transfer window before you start editing the sample descriptions that have been transferred to the log. Otherwise every time you click on the layer (with the Sample Core Description Transfer window open) you will either transfer a new description or be prompted to see if you want to transfer.

- 1. Click anywhere within the Lithology Description track to make it the active track: highlighted in green. Then, make the Lithology Description layer active by selecting it from the Layer Selection List.
- 2. Click anywhere inside the Annotation field. This will activate the RFT Editing boxes and highlight the annotation.
- 3. Make any necessary **changes** to the Sample Description within the highlighted Region.
- 4. Click outside the annotation field to finish or save the changes.

<u>Note</u>: If you wish to edit any other **Sample Description** parameters, including the **Display Scale**, simply make the necessary changes within the RFT Toolbars and then **click outside the annotation field** to finish or save the changes.

Transferring Core Descriptions

Before transferring **Core Descriptions**, it is recommended that you expand the main log screen to the same scale that you will be using to printout your **Core Log**. Normally, **Core Logs** are printed on a log scale of **1:120** or less. To select your scale, **click** on the **Log Scales** field drop box, located on the **Toolbar** in the main **Power*Log / Core & Curve** window, and select a **Log Scale** of **1:120** or less, e.g. 1:96 or 1:48.

Transferring a Single Core Description

1. Click on Sample/Core Description Transfer, under the Options menu selection, or click on the Sample/Core Description Transfer button on the Toolbar to activate the Sample/Core Description Transfer window, which will then display the last description entered into the current well.

Sample / Core Description Transfer
Save Undo New Del First Prev ? Next Last List 1000 to 1003.5 Sh / mnr Ss Iam. %
Sh is predly dk gy, micmica, carb, sils, fis. Ss lam are thn (<3mm) and are predly lt gy, f · c gr, occly vf gr, py srt, sbang - shord, qtz, com micas flks, mnr fld, abnt sils cmt, com cly & pyric mtx, predly disaggd, predly tt / ns.
Selections for Multiple Description Transfer From 0 Single Transfer Core Section
☐ Transfer Depth Range ☐ Transfer % ☑ Transfer Short Form ☑ Top Depth Only

- 2. Use the database navigational tools First Prev
- 3. OR Click on the **button** to enter query mode. The **Depth** and **Rock Type** text fields will become red.

? INexti

Last

Type in either a depth value or rock type where you want to start a query from, and click on the Start

to navigate through the records.

Query button. This will refresh the window with all the records starting from the depth value or rock type that you have just entered. Then, use the database navigational tools to navigate through the records.

- 4. OR, Click on the **button** within the **Sample/Core Description Transfer** window to activate the **Sample/Core Description List** window. Then, **double click** on the desired description within the **Sample/Core Description List** window in order to display it in the **Sample/Core Description Transfer** window
- 5. When the desired Core Description for transfer is displayed within the **Sample/Core Description Transfer** window, activate the **Core Section** check box
- 6. Next, select a spot on the active Lithology Description layer, on the Lithology Description track, where you want the Core Description to be placed.
- 7. Click on a spot and the following system message will be activated, "Transferring Core Descriptions. Do you wish to change screen scale to 1:120 so you can see the core descriptions?"
- 8. Click on the <u>Yes</u> button to proceed with the transfer of the Core Description.

9. Press the Esc key on the keyboard to exit from the Sample/Core Description Transfer window.

<u>Note</u>: You may now wish to change the **Log Scale** back to the default of **1:240**. When the scale is changed back to 1:240 the descriptions transferred will be turned off by default. Refer to Annotation builder display scale to see how to manage these annotations.

Transferring Multiple Core Descriptions

1. Click on Sample/Core Description Transfer, under the Options menu selection, or click on the Sample/Core Description Transfer button on the Toolbar to activate the Sample/Core Description Transfer window, which will then display the last description entered into the current well.

Sample / Core Description Transfer
Save Undo New Del First Prev ? Next Last List 1000 to 1003.5 Sh / mmr Ss lam. %
Sh is predly dk gy, micmica, carb, sils, fis. Ss lam are thm (<3mm) and are predly lt gy, f - c gr, occly vf gr, py stt, sbang - sbudd, qtz, com micas filks, mnr fld, abnt sils cmt, com cly & pyric mtx, predly disaggd, predly tt / ns.
Selections for Multiple Description Transfer (Uncheck for Multi-Transfer) From 1000 to 1012 =>>> Single Transfer Core Section Image: Core Section Image: Core Section Image: Core Section Image: Core Section
 ✓ Transfer Depth Range ✓ Transfer % ✓ Transfer Short Form ✓ Top Depth Only

- 2. Then, **click** on the **button** to select the starting depth of the <u>first</u> interval that you wish to transfer.
- 3. Click on the **button** and select the starting depth of the <u>last</u> interval to be transferred.
- 4. Deactivate the **Single Transfer** check box .
- 5. Activate the **Core Section** check box *I* to ensure that the display scale for the **Core Descriptions** is set at **1:120**. This will ensure that all of the **Core Descriptions** will be seen on the log at a **Log Scale** of **1:120**, while avoiding any possibility of overlapping with the **Sample Descriptions** being displayed at the standard **Log Scale** of **1:240**.
- 6. Click on a spot within the active Lithology Description layer, where you want the Core Descriptions to be placed, and the following system message will be activated, "Do you really want to transfer sample / core text between _ and _ to the log starting at _?"
- 7. If the depths outlined in the system message are <u>correct</u>, then **click** on the <u>Yes</u> **button** and the following system message will be activated, "*Transferring Core Descriptions. Do you wish to change screen scale to 1:120 so you can see the core descriptions?"*
- 8. Click on the <u>Yes</u> button to proceed with the multiple Core Description transfer with the transfer options selected.

Note: The depth difference between the position of the first description and the actual start depth interval of the first description will remain constant for the entire range of your current transfer. If there are multiple descriptions for one interval they will be placed on the log in descending order of percentage one meter apart. These can be edited later in the **Annotation** window.

9. Press the Esc key on the keyboard to exit from the Sample/Core Description Transfer window, when you are finished.

<u>Note</u>: You may now wish to change the **Log Scale** back to the default of **1:240**. When the scale is changed back to 1:240 the descriptions transferred will be turned off by default. Refer to Annotation builder display scale to see how to manage these annotations.

Unwrap LAS - Options pull down menu Item

The LAS import module does not allow the user to be able to import wrapped LAS file formats. The wireline logging companies sometimes wrap their files so that they can be printed on an 8.5 x 11" sheet of paper but does not lend itself to pure columnar data. The user can now unwrap these wrapped LAS files using this utility.

How to unwrap a wrapped LAS file format

1. Click on the Unwrap LAS selection under the Options menu selection. This will activate the LAS Unwrap Utility.

	LAS U	LAS Unwrap Utility 🔀		
	Cho	bose File		
	Un	wap File Exit		
2.	Click on the Choose File butt	on. This will activate the Choose LAS file window.		
		Choose LAS file		
		Save in: 🗀 LAS Wrapped files 🗾 🔶 🖻 📸 📰 -		
		2 12-16-81-11MSrw.las		
		Ø 12-16-81-11RSrw.las Ø 12-16-81-11Rw.las		
		Ø uw_12-16-81-11Mw.las		
		File name: 12:16-81-11Mw.las Save		
		Save as type: LAS files (".las)		
3.		estion through the regular file finding tools and highlight the file and click on the		
	Save button. This will	populate the Unwrap utility with the file to be unwrapped.		
	Linwran File			
4.	Click on the butt	on. This will activate a system message indicating the new file name.		
	Sys	tem Message		
	Fi	le 'uw_'12-16-81-11Mw.las will be created, if it exists it will be overwritten. Continue?		
		Yes No		
5.	Click on the Yes butt	on. This will activate file Success message window showing you your path and		
5.	new file name.	on. This will activate the Success thessage window showing you your pair and		
Not	te: The application basically repar	nes the file with a prefix un_ and put the file in the same folder as it was found.		
1101				
		File Success		
		**=== Unwrapped File Created ===*		
		C:\DEMO\LAS Wrapped files\uw_12-16-81-11Mw.las		
		ОК		
	ок с			
6.	Click on the But	ton and the LAS Unwrap window will also reflect the new file creation.		
	LAS U	nwrap Utility 🛛 🔀		
	Che	bose File 12-16-81-11Mw.las		
	uw_1	2-16-81-11Mw.las		
	Un	wrap File Exit		
7.	If you are finished then click on	the Exit button. This will close the LAS Unwrap Utility.		
	in you are inforted then click Off	and button. This will close the EAO onwrap ounty.		
System Options - Options pull down menu Item

The user can manage Power*Log, Power*Core and Power*Curve system settings with this tab dialogue

window. Once you have made your changes Click on the	 button

General Tab

System Options	
General Fonts Display Favorites	
Home Directory: C:\PowerSuite_V9\ Version Date Format MMM DD, YYYY V1.9 V1.9 S00	
	OK Cancel

Home Directory - This is the directory on your hard drive where **Power*Log**, **Power*Core and Power*Curve** is being executed. The user will not see any symbols on their log or print out any of our reports it you have the wrong home directory.

Show All Wells at Startup This check box when C activated will populate the Open Log window with all the wells in the database. If it is unchecked it may help our corporate users and the time it take to retrieve thousands of wells from the database and to populate the Open Log window with that information. If this check box is deactivated and

you wish to see all your wells then simply **click** on the **Clear Query button** in the Open Log window to see all their wells if this option is deactivated.

Date Format	
MMM DD, YYYY	-
MM/DD/MMY	
MM-DD-YYYY	
MMM DD, YYYY	
YYYY/MM/DD	
YYYYY/MM/DD YYYYY-MM-DD	

Date Format - From this drop box, you can select the date format. This selection determines how every date in **Power*Log / Core & Curve** will be entered and displayed. If you import a log with different date formats, **Power*Log / Core & Curve** will change the dates to comply with the format you've chosen here. The user can change this at any time and all the Date formats will be changed in the database.

Version Compatibility - Enables the user to achieve compatibility for Annotations in the older Versions of Power*Suite (V1.81 and before) and the Annotations in the newer Versions of Power*Suite (V1.9 and later).

Data Buffer Lookahead - The number placed in this field determines how far ahead and behind the current top depth will be stored in the computers buffer. The larger the look ahead number, the longer it takes for Power*Log / Core & Curve to refresh the screen when you exceed the look ahead value. However, until you meet or exceed the look ahead value, scrolling will be much faster, because the database is not yet being accessed.

Fonts Tab

This tab allows the user to set up most of the fonts used in Power*Log, Core and Curve. You can set it up to be used on the current log as well as using the fonts as your defaults when you are making new logs.

System Options		×
General Fonts Display Favo	rites	
Fonts		
Annotation Font	Track Header Font	
AaBbCcDdEe	Set AaBbCcDdE	Set
Survey Font	Layer Header Font	
AaBbGcDdEe	Set AaBbCcDdEe	Set
Bit Record Font	Formation Top Font	
AaBbCcDdEe	Set AaBbCcDdEe	Set
Depth Font		
AaBbCcDdEe	Set Apply to Cu	urrent Log
Depth Orientation: O Vert.	Horz	
Show Depth Units	🔽 Set As Def	ault Fonts
Printed Font Size % of Screen 85	Font (used to scale printed fonts)	
		OK Cancel

Annotation Font - Allows you to determine the default font style, type and size of your annotations on your log, Also this is the default when you use any of the Sample Description Transfer options.

Track Header Font - Allows you to determine the font style, type and size of your Track Headers on your log. All track headers use the same font across the entire log.

Survey Font - Allows you to determine the font style, type and size of your survey data associated with the Survey Layer on your log.

Layer Header Font - Allows you to determine the font style, type and size of your Layer Headers on your log. All Layer headers use the same font across the entire log.

Bit Record Font - Allows you to determine the font style, type and size of your bit record data associated with the Bit Record Layer on your log.

Formation Tops Font - Allows you to determine the font style, type and size of your Formation Tops data associated with the Formation Tops Long and Expanded Layers on your log.

Depth Font - This allows you to determine the font style, type and size of the depth markers in the **Depth** track of the log.

Depth Orientation: C Vert. • Horz - These radio buttons allows the user to change the orientation of the Depth Font on the Layer. Beware you may have to change the Track Width to accommodate the Font size and orientation. Refer to the Log Configuration Builder to do this.

Show Depth Units This check box **when activated will display the depth units with the depth on the Depth Layer.** ie. 1000 ft or 1000 m vs. 1000

Set As Default Fonts This check box vehicle when activated will make the font setting in this window your defaults for any new log created regardless on the Fonts stored in the template.

Printer Font Size - Used to <u>scale</u> the printer's font size up or down, so that the font size on printouts can match the font size displayed on the screen.

As an example, if the font size on the printout is bigger than the font you see on the screen, then the user must reduce this printer font size percentage. And vice versa, if the font size on the printout is smaller than the font you see on the screen then the user must increase the value of this printer font size percentage.

How to Set your Fonts

- 1. Click on System Options selection under the Options menu selection To activate the System Options window.
- 2. Then **click** on the **Font Tab** to activate the Tab.
- 3. Click on the **Set** button beside the Font option you wish to change and this will activate the Font Window.

Font		?	×
Font: Arial Narrow O Book Antiqua O Bookshelf Symbol 7 O Centuy Gothic O Comic Sans MS Courier	Font style: Bold Regular Italic Bold Bold Italic	Size: 10 OK 11 Cancel 12 1 14 1 18 20	
Effects Strikeout Underline Color: Black This is an OpenType font. This printer and your screen.	Sample AaBbYyZz Script: Western same font will be used on	_	

- Select form the Font, Font Style, Size Effects and Color. When you are finished click on the button
- 5. Repeat steps 2-4 for all Font types.
- 6. Click on the Apply to Current Log button.
- 7. If you want to set these as your default Font settings click on the Vertice Set As Default Fonts check box.
- 8. Click on the **DK** button in the Systems Options Tab dialogue window.

0K

Display Tab

System Options
General Fonts Display Favorites
Symbology ✓ Arrowed Subintervals Frequency @1:240 : 1 symbol every 2 _ m ✓ Transparent Lithology Profile □ ✓ Use Global Symbols Interbed Line Display Type ✓ Curve Backup Fill
Grain Size Scale: Wentworth Verbal Display: Mentworth Soft Edges Fill Pattern Verbal Display: Pattern Color: Pattern Color: Pattern Color:
Carbonate Textures Fill Pattern Color: Crosshatch at 45 degrees
Interpreted Lithology Layer Show Bedding Contacts: Show Accessories: Monitor Height 9 inches Uther Directional Survey display: Azimuth Sidewall Core Run and Core No.
OK Cancel

Arrowed Subintervals - This check box is when activated will indicate the top and bottom of your subintervals (portion of an interval) with an arrow rather than a set of symbols. An example is shown below.



Transparent - This check box Solution when activated, this function makes the background of the accessory symbols transparent, so that the bed in the background shows through. If deactivated, a white background surrounds the accessory symbols in order to separate them more from the beds.

Use Global Symbols – With the ability to edit existing metafiles the user may have imported a well that has used metafiles or symbols that have been modified to look differently than the one existing within your system symbols. If you wish to use your symbol set instead of the revised imported ones you can select this check box 🔽 to make that change.

Interbed Line Display Type - This check box *k* when activated will display the interbed data with a line display splitting the two lithology types or when unchecked will display the lithology in an interbed fashion as displayed below.



Curve Backup fill – This check box *k* when activated will show a sideways hatching fill pattern when a curve goes off scale or in the backup mode. If unchecked there will be no hatching pattern when the curve goes off scale.

Frequency @ 1:240 – This drop box determines how often symbols are drawn on a **Lithology Layer**, with the scale of 1:240. For example: 1 symbol every 1 meter at 1:240, 2 symbols every 1 meter at 1:120, 1 symbol every 2 meters at 1:480, and so on. These frequencies are only in effect if you utilize the entire interval in **Oil Shows**, **Rounding**, **Sorting**, **Framework**, or designated an interval in **Sedimentary Structures**, **Traces Fossils** and Rock Accessories.

Lithology Profile - This check box 🗹 when activated will fill in the Carbonate Texture and Grain Size layers with the interpretive lithology. It will draw the lithology to the maximum size filled in over the interval.

Note: The user may wish to turn off the track borders when this option is selected. You will see an example of this shown below.





Grain Size Scale List box - You may choose between Wentworth, Canstrat or Amstrat scales, when using the Grain Size Builder. The Wentworth Grain size only allows full grain size while Canstrat / Amstrat allow half grain sizes when drafting in the Grain size and matrix layers.

Verbal Display: • This • This • radio button will display the Grain Size Track header with the equivalent verbal grain sizes such as such as C slt, VF snd, F snd, M snd, C snd etc.



(mm) Display: C This S radio button will display the Grain Size Track header with the equivalent numeric grain sizes (in mm) such as .0625, .125, .25, .5, 1, 2 etc. as shown above.

C Hard Edges This C radio button will display the grain size with strait edges and right angles between the grain sizes. The illustration below is shown with Lithology Profile activated.





Hard Edges

Soft Edges

Soft Edges This F radio button will display the grain size with curved edges and rounded angles between the grain sizes.

Grain Size Fill Pattern Upw	ard hatch (left to right) at 45 degrees	-	This drop box allows the user to select a hatching
	in Size Layer with the Lithology P		

Grain Size Pattern Color: This color selector allows the user to pick the line color (foreground) when the fill pattern option is used. The background color is found in the Layer configuration for the Grain Size.



Grain Size No Pattern Hard edges

Grain Size Pattern Soft edges

Carbonate Texture Fill Pattern Upward hatch (left to right) at 45 degrees This drop box allows the user to select a hatching pattern when using the Carbonate Texture Layer with the Lithology Profile not activate.

Carbonate Texture Pattern Color: This color selector allows the user to pick the line color (foreground) when the fill pattern option is used. The background color is found in the Layer configuration for the Carbonate Texture Laver.

Carbonate Textures C Hard Edges This C radio button will display the grain size with strait edges and right angles between the Carbonate Textures. The illustration below is shown with Lithology Profile activated.

Carbonate Textures Cont Edges This Control radio button will display the grain size with curved edges and rounded angles between the Carbonate Textures.

Interpreted Lithology Layer - Show Bedding Contacts: 🔽 - When this check box 🗹 is activated the bedding contacts (lines) between the drawn lithology types in the Interpretive Lithology Laver will be shown.

Interpreted Lithology Layer - Show Accessories: 🔽 When this check box 🗹 is activated it will turn on the accessories in the Interpretive Lithology Layer.

Monitor Height - This option allows you to scale your monitor for Power*Log / Core so you may correlate on-screen wells with hard copy logs that you may have. It is recommended that you take an opportunity to measure the vertical viewing area of your monitor in inches and then insert that value in the Monitor Height field. Be aware, however, that if you adjust the screen height knob on your monitor, this will affect the monitor height setting.

Monitor Width - This option allows you to scale your monitor for Power*Curve so you may correlate on-screen wells with hard copy logs that you may have. It is recommended that you take an opportunity to measure the horizontal viewing area of your monitor in inches and then insert that value in the Monitor Width field. Be aware, however, that if you adjust the screen width knob on your monitor, this will affect the monitor width setting.



numbers above the core triangle indicator on the Sidewall Core laver.

Favorites Tab

This tab allows the user to define their System favorites for all the data categories that support these choices. This tab dialogue also allows the user to access the % Lithology Sort order for the % Lithology Track.

System Options			
General Fonts Display	Favorites		
Rock Favorites	% Lithology Sort Order	Fractures Favorites	
Acc Favorites	Sedimentary Favorites	Trace Fossil Favorites	
Diagenesis Favorites			
		OK	Cancel
			·

Rock Favorites - The **Bock Favorites** button when activated allows the user to determine the number of the activation of the Rock Type Builder window in the Interpreted and Detailed Lithology tracks.

How to Change the Rock Favorites Selection

1. Click on the Rock Favorites button in the System Options window to activate the Rock Type Favorites window.



- 2. Click on the Clear All button in the Rock Type Favorites list window to prepare it for the selection of your Rock Favorites.
- 3. Select by **clicking on** or highlighting some of your more **commonly used Rock Types** from the Rock Type Favorites list window.
- 4. **Click** on the **DK button** to return to the System Options window.

5. Click on the **Save** button in the System Options window, when you are finished.

Accessory Favorites - The **button** when activated allows the user to determine the number of favorites for their favorite Accessories and then displays them in a pop-up menu or Tool Box generated by the activation of the Accessory Builder window in the Interpreted and Detailed Lithology tracks.

How to Change the Accessory Favorites Selection

1. Click on the <u>Acc Favorites</u> button in the System Options window to activate the Accessory Favorites window shown below:

Accessory	Favorites	×
	Accessories Selected:	34
Thinbed:	🐺 anhy prim breccia (anhydrite (primary) breccia)	~
	anhy prim clasts [anhydrite (primary) clasts]	
	anhy prim nodules [anhydrite (primary) nodules] anhy prim pebbles [anhydrite (primary) pebbles]	
	 anny prim peobles (annydrike (primary) peobles) 	
Component:	agg grs (aggregate grains)	
component.	www alg codi I [Large Codiacean Algae]	
	alg codi s [Small Codiacean Algae]	
	🔿 alg lams [Algae laminations]	~
Matrix:	😑 arg [argillaceous]	~
	📨 bafst [Bafflestone]	
	8 bent [bentonite]	
	🚯 bits [bituminous]	×
Cement:		
Cemeric.	🚧 anhy [anhydrite] 🚧 bar [barite]	<u>^</u>
	V bits [bituminous]	_
	Calcs [calcareous]	~
Set List Size	*	
34	Clear All OK Car	ncel

- 2. Click on the Clear All button in the Accessory Favorites list window to prepare it for the selection of your Accessory Favorites.
- 3. Select by **clicking on** or highlighting some of your more **commonly used Accessories** from the Accessory Favorites list window.
- 4. **Click** on the **DK button** to return to the System Options window.
- 5. Click on the **Save** button in the System Options window, when you are finished.

Diagenesis Favorites Button

Diagenesis

The **button** when activated allows the user to determine the number of favorites for their favorite Diagenesis list and then displays them in a pop-up menu generated by a right **click** in the Diagenesis layer / track along with a tool box when the layer is activated.

How to Change the Diagenesis Favorites Selection



- 2. Click on the Clear All button in the Diagenesis Favorites list window to prepare it for the selection of your Diagenesis Favorites.
- 3. Select by clicking on or highlighting some of your more commonly used Diagenesis from the list window.
- 4. Click on the **button** to return to the System Options window.
- 5. Click on the **button** in the System Options window, when you are finished.

% Lithology Sort Order

Lithology Sort Order Button- This button activates a window that does the ordering of the % Lithology layer. The rock types listed in this window is the sort order from left to right in Power*Log and top to bottom in Power*Curve when the %Lithology Track / Layer is utilized. The sort order can be changed by the user at any time but will only take effect after the application has been reactivated. The % Lithology Sort Order Window is shown on the next page.

How to Change the % Lithology Sort Order

- 6 Lithology Sort Order Rock Type List Sh brr mdst Coa Cmt Cht dk Cht It Cht voo Cht tripic 3 Glac Till Cht foss Caldk cht Move \varTheta 🧿 Cgilt cht ۵ ۵ Cgl vool ch Ø Oł Ss Cance
- 1. Click on Systems Options under the Options menu selection. This will activate the System Options window.
- 2. Click on the Lithology Sort Order button. This will activate the % Lithology Sort Order window shown above.
- 3. Select the Rock Type the user wishes to move by clicking on the rock type once. This will highlight the rock type.
- 4. Click on the <u>Move</u> button. The Move button will then transform into a <u>Move Start</u> button.
 5. Select the Rock Type you wish to move the previously selected type above by clicking on the new rock type. The previously selected rock type will now be placed above or to the left of the rock type you just
- clicked on.6. If you wish to change the order of more rock types proceed with steps 3-5.
- If you are pleased with the newly rearranged % Lithology Rock order click on the DK button. This will close the % Lithology Sort Order window and put the user back into the Systems Options window.

Then, click on the button in the System Options window.

Sedimentary Favorites Button

Sedimentary Favorites

The **button** when activated allows the user to determine the number of favorites for their favorite Sedimentary Structures list and then displays them in a pop-up menu generated by a right **click** in the Sedimentary Structures layer / track along with a tool box when the layer is activated.

How to Change the Sedimentary Favorites Selection

- Sedimentary Favorites
- 1. **Click** on the **button** in the System Options window to activate the Sedimentary Favorites window shown on the next page:

Sediment	ary Favorites	Đ
	Sedimentary Favorites Selected	: 26
Beddings / (Cross beddings	· · · ·
k chev:	xbdg [chevron cross bedding]	^
x n on be	ed (Centimeter Bed)	
🚛 dm be	ed [Decimeter Bed]	
→ >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	xbdg (herringbone cross bedding)	~
🥵 conto 🔨 oppxl 🌙 flasria	ip [climbing ripple cross lamination] tt [Contosted/slumped laminations] am [current ripple cross lamination] mr [flaser laminations]	▲ ▼
Other		
	I [Ball and pillow structure]	<u>^</u>
	b [Bioturbated - barren]	
	ic (Bioturbated - churned) im (Bioturbated - moderatelv)	
Set List Size	im rotovarbaveu - moueratelyj e	×
26	Clear All OK C	ancel

- 2. Click on the Clear All button in the Sedimentary Favorites list window to prepare it for the selection of your Sedimentary Favorites.
- 3. Select by **clicking on** or highlighting some of your more **commonly used** sedimentary structures from the list window.
- 4. **Click** on the **DK button** to return to the System Options window.
- 5. Click on the **Save** button in the System Options window, when you are finished.

Fractures Favorites Button

Fractures

The **button** when activated allows the user to determine the number of favorites for their favorite Fractures list and then displays them in a pop-up menu generated by a right **click** in the Fractures layer / track along with a tool box when the layer is activated.

How to Change the Fractures Favorites Selection

1. Click on the Fractures button in the System Options window to activate the Fractures Favorites window shown on the next page:

Fractures Favorites	×
Favorite List Selected: 15	
Inso ther ns [Normal Shear Fracture with Stickensides] Tracts her ns [Reverse Shear Fracture with Stickensides] Tracts her sts [Reverse Shear Fracture with Stickensides] Tracts her sts [Strike-slip Shear Fracture] Tract her sts [Strike-slip Shear Fracture] Tracther sts [Strike-slip Shear Fracture]	
Clear All DK Cancel Set List Size 15	

- 2. Click on the Clear All button in the Fracture Favorites list window to prepare it for the selection of your Fracture Favorites.
- 3. Select by clicking on or highlighting some of your more commonly used fractures from the list window.
- 4. Click on the **OK** button to return to the System Options window.
- 5. Click on the Save button in the System Options window, when you are finished.

Trace Fossils Button

The **Trace Fossil Favorites button** when activated allows the user to determine the number of favorites for their favorite Trace Fossils list and then displays them in a pop-up menu generated by a right **click** in the Trace Fossils layer / track along with a tool box when the layer is activated.

How to Change the Trace Fossil Favorites Selection

1. Click on the Trace Fossil Favorites button in the System Options window to activate the Trace Fossils Favorites window.



- 2. Click on the Clear All button in the Trace Fossils Favorites list window to prepare it for the selection of your Trace Fossil Favorites.
- 3. Select by **clicking on** or highlighting some of your more **commonly used** Trace Fossils from the list window.
- 4. **Click** on the **DK button** to return to the System Options window.
- 5. **Click** on the **Save button** in the System Options window, when you are finished.

Grain Size Layer

This layer gives the user the ability to add, delete, or change Entire Intervals and/or Sub-intervals of Grain Sizes for any given Interpreted Lithology (Rock) Interval.

Definitions of an Entire Interval and a Sub-interval will help you to visualize how the system handles data on an interval basis.

Entire Interval: An entire interval is one that is pertinent to an entire rock unit or bed. An entire interval cannot be added until a bed exists.

Sub-interval: A sub-interval can be of any thickness (less than the entire rock unit or bed) and can rest within an entire interval or can stand alone as a sub-interval without being part of an entire interval. You can have as many sub-intervals as you wish. If you enter a sub-interval equal to the rock unit or bed, the sub-interval will become an entire interval.

Snap to Closest Lithology Snap to closest lithology: When checked allows the user to find the top or bottom of an interval easily with the mouse pointer as you have to be within 10 times the mouse pointer or screen accuracy of the interval to catch the top or bottom with a drag.

Double Click Interval Entry Dbl Click Interval Entry. When checked will allow the user to enter a Grain size over an entire interval with a double click on the left mouse button.

Soft Edges Soft Edges. When checked will round off the grain sizes and will present the grain size edges with sine wave lines instead of strain lines.





Grain Size No Pattern Hard edges

Grain Size Pattern Soft edges

How to Change the Grain Size Scale Type (Wentworth, Canstrat or Amstrat)

- 1. Click on System Options selection under the Options menu selection. This will activate the System Options tab dialogue window.
- 2. Click on the Display Tab

3.

	Grain Size Scale: Wentworth	•	
	Amstrat Canstrat		ОК
Then select the corresponding		from the list drop box. Click on the	button
after you have changed your se	election		

How to Change the Grain Size Display from a Solid Color to a Hatching Pattern on your log.

This can only be represented with the Lithology Profile deactivated Lithology Profile

- 1. Click on System Options selection under the Options menu selection. This will activate the System Options tab dialogue window.
- Click on the Display Tab
 Click on the Display Tab
 Then select the grain size pattern
 Then select the grain size pattern
 Select the Foreground Color (Line Color) from the Pattern Color: selector is selector
- 5. **Click** on the **DK button** after you have changed your selection.
- 6. You may also have to change the background color of the Grain size as well. To do this **click** on the **Grain Size** layer.

- 7. Click on the Layer configuration selection under the Edit pull down menu. This will activate the Layer configuration tab dialogue window.
- Click on the Foreground Color: black drop box and select (in this case a 8. background color) for your grain size.
- ΟK Click on the button. 9

Adding an Entire Interval

Note: All description categories, such as Grain Size, are associated with a Rock Type and must have a Rock Type in order to be saved to the database. Therefore, you cannot add an entire interval or sub-interval of Grain Size, until there is a rock unit or bed interval added to the Interpreted Lithology Layer for that interval.

1. Double click on the Grain Size layer to expand the Grain Size track and to activate the Grain Size Builder window shown below:

Grain Size Builder		
Save Del Size / Sequence: Entire Interval: 1452.50 to 1460.00	Grain c slt [coarse silt]	to vf snd [very fine sand]
Sub-Interval: Size / Sequence:	Grain 💌	-
🔽 Snap to closest lithology	•	to
Dbl Click Interval Entry	scale: Wentworth	
🔽 Soft Edges		

Click and drag the mouse pointer from a specific Measured Depth and Grain Size, as indicated within the 2. mouse pointer display box, to another Measured Depth and Grain Size, , e.g. 1209.60 [c snd] to 1204.00 1209.60 [c snd]

[m snd], on the Grain Size track 1204.00 [m snd]

Release the mouse button and the entire Grain Size interval will be drawn accordingly. 3.

Note: If you want to fill in the entire interval with only one grain size and not a range of grain sizes and you have the Dbl Click Interval Entry selected in the builder simply double click in the interval the grain size you wish to enter

and it will fill in the entire interval with your selection.

4. If you wish to see a different type of sequence and the user has previously dragged the entire interval, right click within the interval to be changed and select the Entire Interval Sequence selection and select one of the appropriate selections. The grain size appearance will be redrawn to reflect the newly selected criteria.



- Repeat Steps 2 4 to add more Grain Sizes. 5.
- Press the Esc key on the keyboard to exit from the Grain Size Builder window. 6.

Note: If you have already added a sub-interval and are now adding an entire interval, the sub-interval will now take priority.

Deleting an Entire Interval

- 1. Double click on the Grain Size layer to expand the Grain Size track and to activate the Grain Size Builder window.
- On the Grain Size layer, right click anywhere within the interval that you wish to delete to activate the pop-2. up menu.



- 3. Click on Delete Entire and the Grain Size will be deleted accordingly.
- 4. Press the Esc key on the keyboard to exit from the Grain Size Builder window.

Adding a Sub-interval

- 1. **Double click** on the **Grain Size** layer to expand the **Grain Size** track and to activate the **Grain Size Builder** window.
- Click and drag the mouse pointer from a specific Measured Depth and Grain Size, as indicated within the mouse pointer display box, to another Measured Depth and Grain Size within an entire Grain Size interval 1220.00 [vc snd] 1216.80 [vc snd]

<u>Note</u>: You can drag the pointer to the left or right of the **Grain Size** track to more accurately describe your grain size range.

3. Release the mouse button and the Grain Size sub-interval will be drawn accordingly.

ĺ	Grain Size Builder			×
	Save Del Size / Sequence:	Grain	•	•
	Entire Interval: 1452.50 to 1460.00		💌 to	•
	Sub-Interval: Size / Sequence:	Grain		•
	Snap to closest lithology	c slt [coarse silt]	▼ to vf snd [very fine sand]	-
	Dbl Click Interval Entry	scale: Wentworth		
	🔽 Soft Edges			
	 ✓ Snap to closest lithology ✓ Dbl Click Interval Entry 	c slt [coarse silt]		•

4. If you wish to see a different type of sequence and the user has previously dragged a subinterval, right click within the subinterval to be changed and select the SubInterval Sequence selection and select one of the appropriate selections. The grain size appearance will be redrawn to reflect the newly selected criteria.



- 5. Repeat Steps 2 4 to add more Grain Size sub-intervals to the Grain Size track.
- 6. Press the Esc key on the keyboard to exit from the Grain Size Builder window.

Deleting a Sub-Interval

- 1. **Double click** on the **Grain Size** layer to expand the **Grain Size** track and to activate the **Grain Size Builder** window.
- 2. On the **Grain Size** layer, **right click** anywhere <u>within</u> the sub-interval that you wish to delete to activate the pop-up menu shown below:

	Delete Sub	
	Delete Entire	
	SubInterval Sequence	•
	Entire Interval Sequence	•
~	Soft Edge	
	Hard Edge	
	Edit Options	۲
	Exit	

- 3. Click on Delete Sub and the Grain Size sub-interval will be deleted accordingly.
- 4. Press the Esc key on the keyboard to exit from the Grain Size Builder window.

Clastic Name	Clastic Name (Canstrat)	Crystalline Name	Size Range	Size Range	Phi
(Wentworth)			(mm) from	(mm) to	
Lower Clay	Lower Clay Lower	Lower Crypto Lower	0.00098	0.00147	+10.0 to +9.5
	Lower Clay Upper	Lower Crypto Upper	0.00147	0.00195	+9.5 to +9.0
Upper Clay	Upper Clay Lower	Upper Crypto Lower	0.00195	0.00299	+9.0 to +8.5
	Upper Clay Upper	Upper Crypto Upper	0.00299	0.00391	+8.5 to +8.0
Very Fine Silt	Lower Very Fine Silt	Very Finely micro Upper	0.00391	0.00585	+8.0 to +7.5
	Upper Very Fine Silt	Very Finely micro Upper	0.00585	0.00782	+7.5 to +7.0
Fine Silt	Lower Fine Silt	Finely micro Lower	0.00782	0.01172	+7.0 to +6.5
	Upper Fine Silt	Finely micro Upper	0.01172	0.015625	+6.5 to +6.0
Medium Silt	Lower Medium Silt	Medium micro Lower	0.015625	0.0234375	+6.0 to +5.5
	Upper Medium Silt	Medium micro Upper	0.0234375	0.031250	+5.5 to +5.0
Coarse Silt	Lower Coarse Silt	Coarsely micro Lower	0.031250	0.037875	+5.0 to +4.5
	Upper Coarse Silt	Coarsely micro Upper	0.037875	0.06250	+4.5 to +4.0
Very Fine Sand	Very Fine Lower Sand	Very Finely Lower	0.06250	0.09375	+4.0 to +3.5
	Very Fine Upper Sand	Very Finely Upper	0.09375	0.12500	+3.5 to +3.0
Fine Sand	Fine Lower Sand	Finely Lower	0.12500	0.18750	+3.0 to +2.5
	Fine Upper Sand	Finely Upper	0.18750	0.25000	+2.5 to +2.0
Medium Sand	Medium Lower Sand	Medium Lower	0.25000	0.37500	+2.0 to +1.5
	Medium Upper Sand	Medium Upper	0.37500	0.50000	+1.5 to +1.0
Coarse Sand	Coarse Lower Sand	Coarsely Lower	0.50000	0.75000	+1.0 to +0.5
	Coarse Upper Sand	Coarsely Upper	0.75000	1.00000	+0.5 to +0.0
Very Coarse Sand	Very Coarse Lower Sand	Very Coarsely Lower	1.00000	1.50000	0.0 to -0.5
	Very Coarse Upper Sand	Very Coarsely Upper	1.50000	2.00000	-0.5 to -1.0
Granules	Granules Lower	Finely mega Lower	2.00000	3.00000	-1.0 to -1.5
	Granules Upper	Finely mega Upper	3.00000	4.00000	-1.5 to -2.0
Fine Pebbles	Fine Pebbles Lower	Coarsely mega Lower	4.00000	6.00000	-2.0 to -2.5
	Fine Pebbles Upper	Coarsely mega Upper	6.00000	8.00000	-2.5 to -3.0
Medium Pebbles	Medium Pebbles Lower		8.00000	12.00000	-3.0 to -3.5
	Medium Pebbles Upper		12.00000	16.00000	-3.5 to -4.0
Coarse Pebbles	Coarse Pebbles Lower		16.00000	24.00000	-4.0 to -4.5
	Coarse Pebbles Upper		24.00000	32.00000	-4.5 to -5.0
Very Coarse Pebbles	Very Coarse Pebbles Lower		32.00000	48.00000	-5.0 to -5.5
	Very Coarse Pebbles Upper		48.00000	64.00000	-5.5 to -6.0
Lower Cobbles	Lower Cobbles Lower		64.00000	96.00000	-6.0 to -6.5
	Lower Cobbles Upper		96.00000	128.00000	-6.5 to -7.0
Upper Cobbles	Upper Cobbles Lower		128.00000	192.00000	-7.0 to -7.5
	Upper Cobbles Upper		192.00000	256.00000	-7.5 to -8.0
Lower Boulders	Lower Boulders Lower		256.00000	384.00000	-8.0 to -8.5
	Lower Boulders Upper		384.00000	512.00000	-8.5 to -9.0
Upper Boulders	Upper Boulders Lower		512.0000	768.0000	-9.0 to -9.5
	Upper Boulders Upper		768.00000	1024.00000	-9.5 to -10.0

Expanded Combined Canstrat / Wentworth Grain Sizes (Clastic/Crystalline Rocks):

Grain Size Matrix Layer

This layer allows the user to log two grain sizes (bimodal grain size) at the same depth. The layer gives the user the ability to add, delete, or change Entire Intervals and/or Sub-intervals of Grain Sizes for any given Interpreted Lithology (Rock) Interval.

Definitions of an Entire Interval and a Sub-interval will help you to visualize how the system handles data on an interval basis.

Entire Interval: An entire interval is one that is pertinent to an entire rock unit or bed. An entire interval cannot be added until a bed exists.

Sub-interval: A sub-interval can be of any thickness (less than the entire rock unit or bed) and can rest within an entire interval or can stand alone as a sub-interval without being part of an entire interval. You can have as many sub-intervals as you wish. If you enter a sub-interval equal to the rock unit or bed, the sub-interval will become an entire interval.

Snap to Closest Lithology Snap to closest lithology: When checked allows the user to find the top or bottom of an interval easily with the mouse pointer as you have to be within 10 times the mouse pointer or screen accuracy of the interval to catch the top or bottom with a drag.

Double Click Interval Entry Dbl Click Interval Entry: When checked will allow the user to enter a Grain size over an entire interval with a double click on the left mouse button.

Soft Edges Soft Edges: When checked will round off the grain sizes and will present the grain size edges with sine wave lines instead of strain lines.

If the user has the Grain Size Matrix layer added to the Grain Size track, the user should verify that the Lithology Profile \Box check box \Box is not activated. To do so, **click** on **System Options** under the **Options** menu

selection and deactivate this check box . Click on the **DK** button.

Note: If the Grain Size track contains two headings that overlap, click on Layer Configuration under the Options
menu selection and uncheck the 🔽 Display Layer Name or Curve Scale on Track check box 🗔. Then click on the

How to Change the Grain Size Display from a Solid Color to a Hatching Pattern on your log.

This can only be represented with the Lithology Profile deactivated Lithology Profile

- 1. **Click** on **System Options selection** under the **Options** menu selection. This will activate the System Options tab dialogue window.
- 2. Click on the Display Tab Grain Size Fill Pattern Horizontal hatch Vertical hatch Downward hatch (left to right) at 45 degrees from the Fill pattern list drop box. Then select the grain size pattern ¥ 3. Select the Foreground Color (Line Color) from the Pattern Color: selector 4. OK. Click on the button after you have changed your selection. 5. You may also have to change the background color of the Grain size as well. To do this click on the Grain Size 6. layer. 7. Click on the Layer configuration selection under the Edit pull down menu. This will activate the Layer configuration tab dialogue window. 8. Click on the Foreground Color: black drop box and select (in this case a background color) for your grain size.
- 9. Click on the OK button.

How to Change the Grain Size Scale Type (Wentworth, Canstrat or Amstrat)

from the list drop box. Click on the

0K

button

- Click on System Options selection under the Options menu selection. This will activate the System Options 1. tab dialogue window.
- 2. Click on the Display Tab
- Then select the corresponding 3. after you have changed your selection.

in Size Scale:	Wentworth	-
	Amstrat Canstrat	

Adding an Entire Interval

Note: All description categories, such as Grain Size Matrix, are associated with a Rock Type and must have a Rock Type in order to be saved to the database. Therefore, you cannot add an entire interval or sub-interval of Grain Size Matrix, until there is a rock unit or bed interval added to the Interpreted Lithology Layer for that interval.

- Make the Grain Size Matrix layer active within the Grain Size track by clicking on the track and then 1. selecting the Grain Size Matrix layer from the Layer Selection List field
- 2. Double click on the Grain Size Matrix layer to expand the Grain Size track and to activate the Grain Size Matrix Builder window shown below:

Grain Size Matrix Builder				X
Save Del Size / Sequence: Entire Interval: 1452.50 to 1460.00	Grain f snd [fine sand]	▼ ▼ to	m snd [medium sand]	•
Sub-Interval: Size / Sequence:	Grain	•		•
🔽 Snap to closest lithology		🔹 to		•
Dbl Click Interval Entry	scale: Wentworth			
🔽 Soft Edges				

- Click and drag the mouse pointer from a specific Measured Depth and Grain Size, as indicated within the 3. mouse pointer display box, to another Measured Depth and Grain Size, e.g. 1199.00 [vf snd] to 1209.00 [f 1199.00 [vf snd]
 - snd], on the Grain Size track [1209.00 [f snd]]
- Release the mouse button and the entire Grain Size Matrix interval will be drawn accordingly. 4.

Note: If you want to fill in the entire interval with only one grain size and not a range of grain sizes and you have the Dbl Click Interval Entry selected in the builder simply double click in the interval the grain size you wish to enter

and it will fill in the entire interval with your selection.

If you wish to see a different type of sequence and the user has previously dragged the entire interval, right 5. click within the interval to be changed and select the Entire Interval Sequence selection and select one of the appropriate selections. The grain size matrix appearance will be redrawn to reflect the newly selected criteria.



6. Repeat Steps 2 - 4 to add more Grain Size Matrixes.

Note: The intervals that belong to the active layer are purple. The non active layers data are black, e.g. the intervals within the Grain Size Matrix layer are purple while the intervals within the Grain Size layer are black. Also, if you have already added a sub-interval and are now adding an entire interval, the sub-interval will now take priority.

7. Press the Esc key on the keyboard to exit from the Grain Size Builder window.

Deleting an Entire Interval

- 1. Make the Grain Size Matrix layer active within the Grain Size track by clicking on the track and then selecting the Grain Size Matrix layer from the Layer Selection List field
- 2. Double click on the Grain Size Matrix layer to expand the Grain Size track and to activate the Grain Size Matrix Builder window.
- 3. On the **Grain Size Matrix** layer, **right click** anywhere <u>within</u> the interval that you wish to delete to activate the pop-up menu.

	Delete Sub	
	Delete Entire	
	SubInterval Sequence	•
	Entire Interval Sequence	۲
¥	Soft Edge	
	Hard Edge	
	Edit Options	۲
	Exit	

- 4. Click on Delete Entire and the Grain Size Matrix will be deleted accordingly.
- 5. Press the Esc key on the keyboard to exit from the Grain Size Matrix Builder window.

Adding a Sub-interval

- 1. Make the **Grain Size Matrix** layer active within the **Grain Size** track by clicking on the track and then selecting the **Grain Size Matrix** layer from the **Layer Selection List** field.
- 2. Double click on the Grain Size Matrix layer to expand the Grain Size track and to activate the Grain Size Matrix Builder window.
- Click and drag the mouse pointer from a specific Measured Depth and Grain Size, as indicated within the mouse pointer display box, to another Measured Depth and Grain Size within an entire Grain Size 1204.00 [vf snd]

Matrix interval 1209.00 [m snd]

<u>Note</u>: You can drag the pointer to the left or right of the **Grain Size** track to more accurately describe your grain size range.

4. Release the mouse button and the Grain Size Matrix sub-interval will be drawn accordingly.

Grain Size Matrix Builder			×
Save Del Size / Sequence:	Grain	•	•
Entire Interval: 1452.50 to 1460.00		💌 to	•
Sub-Interval: Size / Sequence:	Grain	•	-
Snap to closest lithology	c slt [coarse silt]	💌 to c sit (coarse silt)	-
Dbl Click Interval Entry	scale: Wentworth		
🔽 Soft Edges			

5. If you wish to see a different type of sequence and the user has previously dragged a subinterval, **right click within the subinterval** to be changed and **select** the **Subinterval Sequence** selection and select one of the appropriate selections. The grain size appearance will be redrawn to reflect the newly selected criteria.

Delete Sub Delete Entire		
SubInterval Sequence	•	Fining Upwards
Entire Interval Sequence Soft Edge Hard Edge	۲	Coarsening Upwards Blocky
Edit Options	Þ	
Exit		

- 6. Repeat Steps 2 4 to add more Grain Size Matrix sub-intervals to the Grain Size track.
- 7. Press the Esc key on the keyboard to exit from the Grain Size Matrix Builder window.

Deleting a Sub-Interval

- 1. Make the **Grain Size Matrix** layer active within the **Grain Size** track by clicking on the track and then selecting the **Grain Size Matrix** layer from the **Layer Selection List** field.
- 2. Double click on the Grain Size Matrix layer to expand the Grain Size track and to activate the Grain Size Matrix Builder window.
- 3. On the **Grain Size Matrix** layer, **right click** anywhere <u>within</u> the sub-interval that you wish to delete to activate the pop-up menu shown below:



- Click on Delete Sub and the Grain Size Matrix sub-interval will be deleted accordingly.
 Press the Esc key on the keyboard to exit from the Grain Size Matrix Builder window.

|--|

Lower Cl Upper Clay Upper Cl Upper Clay Upper Cl Upper Cl Upper Cl Upper Cl Upper Cl Upper Cl Upper Cl Upper Ve Fine Silt Lower M Upper M Coarse Silt Lower Co Upper Co Very Fine Sand Very Fine Fine Sand Fine Low Fine Upp Medium Sand Medium Coarse Sand Coarse L Coarse L Very Coarse Sand Coarse L Coarse Sand Coarse L Coarse Coarse L Coarse Coarse L Coarse Coarse L Coarse Coarse C Fine Pebbles Fine Pebbles Fine Pebbles Medium Coarse Pebbles Coarse Fine Peb	ne Silt edium Silt edium Silt parse Silt e Lower Sand e Upper Sand rer Sand her Sand Lower Sand	Lower Crypto Lower Lower Crypto Upper Upper Crypto Upper Very Finely micro Upper Very Finely micro Upper Very Finely micro Upper Finely micro Lower Finely micro Upper Medium micro Lower Medium micro Upper Coarsely micro Upper Coarsely micro Upper Very Finely Lower Very Finely Lower Finely Lower Finely Lower Finely Upper Medium Lower	(mm) from 0.00098 0.00147 0.00195 0.00299 0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.037875 0.06250 0.09375 0.12500 0.12500	(mm) to 0.00147 0.00195 0.00299 0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750 0.18750	$\begin{array}{r} +10.0 \text{ to } +9.5 \\ +9.5 \text{ to } +9.0 \\ +9.0 \text{ to } +8.5 \\ +8.5 \text{ to } +8.0 \\ +8.0 \text{ to } +7.5 \\ +7.5 \text{ to } +7.0 \\ +7.0 \text{ to } +6.5 \\ +6.5 \text{ to } +6.0 \\ +6.0 \text{ to } +5.5 \\ +5.5 \text{ to } +5.0 \\ +5.0 \text{ to } +4.5 \\ +4.5 \text{ to } +4.0 \\ +4.0 \text{ to } +3.5 \\ +3.5 \text{ to } +3.0 \\ +3.0 \text{ to } +2.5 \end{array}$
Lower Cl Upper Clay Upper Cl Upper Cl Very Fine Silt Lower Ve Fine Silt Lower Fi Upper Ve Fine Silt Lower M Upper M Coarse Silt Lower M Upper M Coarse Silt Lower Co Upper Co Very Fine Sand Very Fine Fine Sand Fine Low Fine Upp Medium Sand Medium Coarse Sand Coarse L Coarse L Very Coarse Sand Very Coarse Sand Coarse Sand Coarse L Coarse L Coarse Sand Coarse L Coarse Sand Coarse Sand Coarse L Coarse Sand Coarse Sand Sanules	ay Upper ay Lower ay Upper ary Fine Silt ery Fine Silt ne Silt edium Silt edium Silt barse Sand barse Sand	Lower Crypto Upper Upper Crypto Lower Upper Crypto Upper Very Finely micro Upper Finely micro Upper Finely micro Lower Medium micro Upper Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Lower Finely Lower Finely Lower Finely Upper	0.00147 0.00195 0.00299 0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.00195 0.00299 0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	$\begin{array}{r} +9.5 \text{ to } +9.0 \\ +9.0 \text{ to } +8.5 \\ +8.5 \text{ to } +8.0 \\ +8.0 \text{ to } +7.5 \\ +7.5 \text{ to } +7.0 \\ +7.0 \text{ to } +6.5 \\ +6.5 \text{ to } +6.0 \\ +6.0 \text{ to } +5.5 \\ +5.5 \text{ to } +5.0 \\ +5.0 \text{ to } +4.5 \\ +4.5 \text{ to } +4.0 \\ +4.0 \text{ to } +3.5 \\ +3.5 \text{ to } +3.0 \end{array}$
Upper Clay Upper Cl Upper Cl Upper Cl Very Fine Silt Lower Ve Fine Silt Lower Fi Upper Ve Upper Fi Medium Silt Lower Mi Coarse Silt Lower Co Very Fine Sand Very Fine Very Fine Sand Very Fine Fine Sand Fine Lower Fine Sand Fine Lower Coarse Sand Coarse L Coarse Sand Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse L Seranules Granules Fine Pebbles Fine Pebbles Fine Pebbles Fine Pebbles Medium Medium Coarse Pebbles Coarse Fine Pebbles	ay Lower ay Upper ary Fine Silt ery Fine Silt ne Silt edium Silt edium Silt barse Silt barse Silt barse Silt barse Silt barse Silt barse Sand e Upper Sand rer Sand Lower Sand	Upper Crypto Lower Upper Crypto Upper Very Finely micro Upper Finely micro Upper Finely micro Lower Medium micro Lower Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Lower Finely Lower Finely Lower Finely Upper	0.00195 0.00299 0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.00299 0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	$\begin{array}{r} +9.0 \text{ to } +8.5 \\ +8.5 \text{ to } +8.0 \\ +8.0 \text{ to } +7.5 \\ +7.5 \text{ to } +7.0 \\ +7.0 \text{ to } +6.5 \\ +6.5 \text{ to } +6.0 \\ +6.0 \text{ to } +5.5 \\ +5.5 \text{ to } +5.0 \\ +5.0 \text{ to } +4.5 \\ +4.5 \text{ to } +4.0 \\ +4.0 \text{ to } +3.5 \\ +3.5 \text{ to } +3.0 \end{array}$
Upper Cl Very Fine Silt Lower Ve Upper Ve Fine Silt Lower Fi Upper Fi Medium Silt Lower Mi Upper Mi Coarse Silt Lower Co Very Fine Sand Very Fine Fine Sand Fine Lower Fine Sand Fine Lower Medium Sand Medium Coarse Sand Coarse L Coarse Sand Very Coarse L Very Coarse Sand Very Coarse L Seranules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse Fine Peb	ay Upper ery Fine Silt ery Fine Silt ne Silt edium Silt edium Silt parse Silt parse Silt e Lower Sand er Sand per Sand Lower Sand	Upper Crypto Upper Very Finely micro Upper Very Finely micro Upper Finely micro Lower Finely micro Upper Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.00299 0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	$\begin{array}{r} +8.5 \text{ to } +8.0 \\ +8.0 \text{ to } +7.5 \\ +7.5 \text{ to } +7.0 \\ +7.0 \text{ to } +6.5 \\ +6.5 \text{ to } +6.0 \\ +6.0 \text{ to } +5.5 \\ +5.5 \text{ to } +5.0 \\ +5.0 \text{ to } +4.5 \\ +4.5 \text{ to } +4.0 \\ +4.0 \text{ to } +3.5 \\ +3.5 \text{ to } +3.0 \end{array}$
Very Fine Silt Lower Very Fine Silt Lower Fine Medium Silt Lower Ministry Coarse Silt Lower Ministry Coarse Silt Lower Construction Very Fine Sand Very Fine Very Fine Sand Very Fine Fine Sand Fine Lower Fine Sand Fine Lower Coarse Sand Coarse L Coarse Sand Coarse L Coarse Sand Very Coarse L Very Coarse Sand Very Coarse Sand Very Coarse Sand Very Coarse L Coarse Sand Seranules Fine Pebbles Fine Pebbles Fine Pebbles Fine Pebbles Medium Coarse Pebbles Coarse Fine Pebbles Coarse Fine Pebbles Seranules	ery Fine Silt ery Fine Silt ne Silt ne Silt edium Silt edium Silt parse Silt parse Silt e Lower Sand er Sand per Sand Lower Sand	Very Finely micro Upper Very Finely micro Upper Finely micro Lower Finely micro Upper Medium micro Lower Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.00391 0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	$\begin{array}{r} +8.0 \text{ to } +7.5 \\ +7.5 \text{ to } +7.0 \\ +7.0 \text{ to } +6.5 \\ +6.5 \text{ to } +6.0 \\ +6.0 \text{ to } +5.5 \\ +5.5 \text{ to } +5.0 \\ +5.0 \text{ to } +4.5 \\ +4.5 \text{ to } +4.0 \\ +4.0 \text{ to } +3.5 \\ +3.5 \text{ to } +3.0 \end{array}$
Upper Ver Fine Silt Lower Fine Upper Fine Medium Silt Lower Mine Upper Mine Upper Mine Coarse Silt Lower Cone Very Fine Sand Very Fine Very Fine Fine Sand Very Fine Fine Sand Fine Lower Medium Fine Upp Medium Medium Coarse Sand Coarse L Very Coarse Sand Very Coarse Very Coarse Sand Very Coarse Granules Granules Fine Pebbles Fine Pebbles Fine Pebbles Medium Medium Medium Coarse Pebbles Coarse Fine	ery Fine Silt ne Silt edium Silt edium Silt barse Silt barse Silt e Lower Sand e Upper Sand rer Sand her Sand Lower Sand	Very Finely micro Upper Finely micro Lower Finely micro Upper Medium micro Lower Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.00585 0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	+7.5 to +7.0 +7.0 to +6.5 +6.5 to +6.0 +6.0 to +5.5 +5.5 to +5.0 +5.0 to +4.5 +4.5 to +4.0 +4.0 to +3.5 +3.5 to +3.0
Fine Silt Lower Fi Wedium Silt Lower M Upper M Upper M Coarse Silt Lower Co Upper Co Upper Co Very Fine Sand Very Fine Fine Sand Fine Low Fine Sand Fine Upp Medium Sand Medium Coarse Sand Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse L Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse Fine Peb	ne Silt ne Silt edium Silt parse Silt parse Silt e Lower Sand e Upper Sand rer Sand her Sand Lower Sand	Finely micro Lower Finely micro Upper Medium micro Lower Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.00782 0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	+7.0 to +6.5 +6.5 to +6.0 +6.0 to +5.5 +5.5 to +5.0 +5.0 to +4.5 +4.5 to +4.0 +4.0 to +3.5 +3.5 to +3.0
Upper Fi Medium Silt Lower M Upper M Upper M Coarse Silt Lower Co Upper Co Upper Co Very Fine Sand Very Fine Fine Sand Fine Low Fine Sand Fine Upp Medium Sand Medium Coarse Sand Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse L Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Medium Pebbles Medium Coarse Pebbles Coarse F	ne Silt edium Silt edium Silt parse Silt e Lower Sand e Upper Sand rer Sand her Sand Lower Sand	Finely micro Upper Medium micro Lower Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.01172 0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	+6.5 to +6.0 +6.0 to +5.5 +5.5 to +5.0 +5.0 to +4.5 +4.5 to +4.0 +4.0 to +3.5 +3.5 to +3.0
Medium Silt Lower M. Upper M. Upper M. Coarse Silt Lower Co. Upper Co. Upper Co. Very Fine Sand Very Fine Fine Sand Fine Low Fine Sand Fine Upp Medium Sand Medium Coarse Sand Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse L Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse F	edium Silt edium Silt parse Silt e Lower Sand e Upper Sand rer Sand rer Sand Lower Sand	Medium micro Lower Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.015625 0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	+6.0 to +5.5 +5.5 to +5.0 +5.0 to +4.5 +4.5 to +4.0 +4.0 to +3.5 +3.5 to +3.0
Upper M. Coarse Silt Lower Co Upper Co Very Fine Very Fine Sand Very Fine Fine Sand Fine Low Fine Sand Fine Upp Medium Sand Medium Coarse Sand Coarse L Coarse Sand Very Coarse L Very Coarse Sand Very Coarse L Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Medium Medium	edium Silt parse Silt e Lower Sand e Upper Sand er Sand er Sand Lower Sand	Medium micro Upper Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.0234375 0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	+5.5 to +5.0 +5.0 to +4.5 +4.5 to +4.0 +4.0 to +3.5 +3.5 to +3.0
Coarse Silt Lower Co Upper Co Very Fine Sand Very Fine Fine Sand Fine Low Fine Sand Fine Low Medium Sand Medium Coarse Sand Coarse L Coarse Sand Coarse L Coarse Sand Very Coa Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse F	barse Silt barse Silt e Lower Sand e Upper Sand er Sand er Sand Lower Sand	Coarsely micro Lower Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.031250 0.037875 0.06250 0.09375 0.12500 0.18750	0.037875 0.06250 0.09375 0.12500 0.18750	+5.0 to +4.5 +4.5 to +4.0 +4.0 to +3.5 +3.5 to +3.0
Upper Co Very Fine Sand Very Fine Very Fine Sand Fine Low Fine Sand Fine Low Medium Sand Medium Coarse Sand Coarse L Coarse Sand Coarse L Very Coarse Sand Very Coa Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse F	barse Silt e Lower Sand e Upper Sand er Sand er Sand Lower Sand	Coarsely micro Upper Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.037875 0.06250 0.09375 0.12500 0.18750	0.06250 0.09375 0.12500 0.18750	+4.5 to +4.0 +4.0 to +3.5 +3.5 to +3.0
Very Fine Sand Very Fine Very Fine Fine Sand Fine Low Fine Sand Fine Upp Medium Sand Medium Coarse Sand Coarse L Coarse Sand Coarse L Very Coarse Sand Very Coa Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse F	e Lower Sand e Upper Sand er Sand er Sand Lower Sand	Very Finely Lower Very Finely Upper Finely Lower Finely Upper	0.06250 0.09375 0.12500 0.18750	0.09375 0.12500 0.18750	+4.0 to +3.5 +3.5 to +3.0
Very Fine Fine Sand Fine Low Fine Upp Fine Upp Medium Sand Medium Coarse Sand Coarse L Coarse Sand Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse L Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Medium Medium Coarse Pebbles Coarse F	e Upper Sand er Sand er Sand Lower Sand	Very Finely Upper Finely Lower Finely Upper	0.09375 0.12500 0.18750	0.12500 0.18750	+3.5 to +3.0
Fine Sand Fine Low Fine Upp Medium Medium Sand Medium Coarse Sand Coarse L Coarse Sand Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse L Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Medium Medium Coarse Pebbles Coarse F	er Sand er Sand Lower Sand	Finely Lower Finely Upper	0.12500 0.18750	0.18750	
Fine Upp Medium Sand Medium Coarse Sand Coarse L Coarse Sand Very Coarse L Very Coarse Sand Very Coarse Co Very Coarse Sand Very Coarse Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse F	er Sand Lower Sand	Finely Upper	0.18750		+3.0 to +2.5
Medium Sand Medium Coarse Sand Coarse L Coarse Sand Coarse L Very Coarse Sand Very Coarse Very Coarse Sand Very Coarse Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse F	Lower Sand			0.05000	0.0.0.10
Medium Coarse Sand Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse Granules Granules Granules Fine Pebbles Fine Pebbles Fine Pebbles Medium Pebbles Medium Coarse Pebbles Coarse F				0.25000	+2.5 to +2.0
Medium Coarse Sand Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse Granules Granules Granules Fine Pebbles Fine Pebbles Fine Pebbles Medium Pebbles Medium Coarse Pebbles Coarse F			0.25000	0.37500	+2.0 to +1.5
Coarse L Very Coarse Sand Very Coarse L Very Coarse Sand Very Coarse Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Medium Coarse Pebbles Coarse F	Upper Sand	Medium Upper	0.37500	0.50000	+1.5 to +1.0
Very Coarse Sand Very Coa Very Coa Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse F	ower Sand	Coarsely Lower	0.50000	0.75000	+1.0 to +0.5
Very Coa Granules Granules Fine Pebbles Fine Peb Medium Pebbles Medium Coarse Pebbles Coarse F	Jpper Sand	Coarsely Upper	0.75000	1.00000	+0.5 to +0.0
Granules Granules Granules Fine Pebbles Fine Peb Fine Pebbles Medium Medium Coarse Pebbles Coarse F	arse Lower Sand	Very Coarsely Lower	1.00000	1.50000	0.0 to -0.5
Granules Granules Granules Fine Pebbles Fine Peb Fine Pebbles Medium Medium Coarse Pebbles Coarse F	arse Upper Sand	Very Coarsely Upper	1.50000	2.00000	-0.5 to -1.0
Granules Fine Pebbles Fine Peb Fine Peb Medium Pebbles Medium Medium Coarse Pebbles Coarse F		Finely mega Lower	2.00000	3.00000	-1.0 to -1.5
Fine Pebbles Fine Peb Fine Peb Medium Pebbles Medium Medium Coarse Pebbles Coarse F	Upper	Finely mega Upper	3.00000	4.00000	-1.5 to -2.0
Fine Peb Medium Pebbles Medium Medium Coarse Pebbles Coarse F	bles Lower	Coarsely mega Lower	4.00000	6.00000	-2.0 to -2.5
Medium Pebbles Medium Medium Coarse Pebbles Coarse F	bles Upper	Coarsely mega Upper	6.00000	8.00000	-2.5 to -3.0
Medium Coarse Pebbles Coarse F	Pebbles Lower		8.00000	12.00000	-3.0 to -3.5
Coarse Pebbles Coarse F	Pebbles Upper		12.00000	16.00000	-3.5 to -4.0
	Pebbles Lower		16.00000	24.00000	-4.0 to -4.5
Coarse F	Pebbles Upper		24.00000	32.00000	-4.5 to -5.0
	arse Pebbles Lower		32.00000	48.00000	-5.0 to -5.5
	arse Pebbles Upper		48.00000	64.00000	-5.5 to -6.0
	obbles Lower		64.00000	96.00000	-6.0 to -6.5
	obbles Upper		96.00000	128.00000	-6.5 to -7.0
	obbles Lower		128.00000	192.00000	-7.0 to -7.5
			192.00000	256.00000	-7.5 to -8.0
	obbles Upper		256.00000	384.00000	-8.0 to -8.5
	obbles Upper		384.00000	512.00000	-8.5 to -9.0
	oulders Lower		512.0000	768.0000	-9.0 to -9.5
Upper Bounders Upper Bounders			012.0000	100.0000	-9.5 to -10.0

How to Change the Grain Size or Grain Size Matrix Scales

Grain Size scale can be changed through the Layer Configuration window.

- 1. Click on the Layer Configuration button on the Toolbar, when the Grain Size or Grain Size Matrix layer is active. This will activate the Layer Configuration window tab dialogue window
- 2. Click on the Layer Scales tab shown below.

ctive Layer Configuration [Grain Size]	
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Defin Save Undo Porosity Grade Scale Percent Layer Scale Dip Meter Scale Grain Size Scale Carbonate Texture Scale Left: 2 Right: 0.00782 Verbal Settings Grain Size Scales Very Coarse Sand to Very Fine Silt Carbonte Texture Scales to Very Fine Silt Dip Meter Quality Scale Left: Right:	vitions
DK Cancel	

- 3. **Select** the left and right grain size scales from the Grain Size Scale drop boxes.
- 4. Click on the **OK** button and select from the System Message window to exit the Layer Configuration window.

Porosity Grade Layer

Definitions of an Entire Interval and a Sub-interval will help you to visualize how the system handles data on an interval basis.

Entire Interval: An entire interval is one that is pertinent to an entire rock unit or bed. An entire interval cannot be added until a bed exists.

Sub-interval: A sub-interval can be of any thickness(less than the entire rock unit or bed), and can rest within an entire interval or can stand alone as a sub-interval without being part of a entire interval. You can have as many subintervals as you wish. If you have a sub-interval equal to or greater than the rock unit or bed and the top intervals are identical, the sub-interval will become an entire interval.

Snap to: Snap To when checked allows the user to find the top or bottom of an interval easily with the mouse pointer as you have to be within 10 times the mouse pointer or screen accuracy of the interval to catch the top or bottom with a drag.

Double Click Interval Version When checked will allow the user to enter a porosity grades over an entire interval with a double click on the left mouse button.

Soft Edges Soft Edges: When checked will round off the porosity grades and will present the porosity grades edges with sine wave lines instead of strain lines.

Porosity Pattern and Color Pattern: Crosshatch at 45 degrees

Pattern Color: These

selectors allow the user to select a specific pattern and foreground color for the lines for the porosity grade indicators. The user may have to change the background color for the porosity grade in the layer configuration window so that the lines show on the layer. (le black on black)





Ŧ

Porosity Grade No Pattern Hard edges

Porosity Grade Pattern Soft edges

How to Change the Porosity Grade Pattern from a Solid Color to a Hatching Pattern on your log.

1. Double click on the Porosity Grade layer to expand the Porosity (%) track and to activate the Porosity Builder window:

2.	Select the pattern Pattern: Crosshatch at 45 degrees Pattern Color: from the Fill pattern list drop box.
3. 4.	Select the Foreground Color (Line Color) from the Pattern Color: selector button. You may also have to change the background color of the Porosity Grade as well. With the Porosity Grade layer click on the Layer configuration selection under the Edit pull down menu. This will activate the Layer
5.	configuration tab dialogue window. Click on the Foreground Color: black drop box and select (in this case a background color) for your porosity grade layer. The illustration above is a white background.
6.	Click on the button.

Adding an Entire Interval

<u>Note</u>: All description categories such as **Porosity Grades** are associated with a **Rock Type** and must have a **Rock Type** in order to be saved to the database. Therefore, you cannot add an entire interval or sub-interval of **Porosity Grades**, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

7. Double click on the Porosity Grade layer to expand the Porosity (%) track and to activate the Porosity Builder window shown below:

Porosity Build	er 🔀
Save Del Entire Interval: Sub-Interval: Ø Dbl Click Inter Ø Snap To Ø Soft Edges	Grade (%) 1452.50 to 1460.00 1 💌
Pattern:	Pattern Color: 🗾
Crosshatch at 45	degrees 🗾 👻

- Then, using the left mouse button, click and drag the mouse pointer from a specific Measured Depth and Porosity (%), as indicated within the mouse pointer display box, to another Measured Depth, e.g. 1200.00 [3%] to 1203.00, on the Porosity (%) track.
- 9. Release the mouse button and the entire Porosity (%) interval will be drawn in purple accordingly. Repeat Steps 2 and 3 to add more Porosity (%).

Or Use the Double Click data entry method.

1. With the Dbl Click Interval selected in the builder simply double click in the interval the porosity grade you wish to enter and it will fill in the entire interval with purple with your selection.

<u>Note</u>: If you have already added a sub-interval and are now adding an entire interval, the sub-interval will now take priority.

Press the Esc key on the keyboard to exit from the Porosity Builder window.

Deleting an Entire Interval

- 1. Double click on the Porosity Grade layer to expand the Porosity (%) track and to activate the Porosity Builder window.
- 2. On the **Porosity (%)** layer, **right click** anywhere <u>within</u> the purple interval that you wish to delete to activate the pop-up menu shown below:



- 3. Click on Delete Entire and the entire Porosity Grade interval will be deleted accordingly.
- 4. Press the **Esc** key on the keyboard to exit from the **Porosity Builder** window.

Adding a Sub-Interval

<u>Note</u>: An entire interval does not have to be in effect in order to add a sub-interval. You can add a sub-interval to a rock layer or bed that does not contain an entire interval. To add a sub-interval:

- 1. Double click on the Porosity Grade layer to expand the Porosity (%) track and to activate the Porosity Builder window.
- 2. Click and drag the mouse pointer from a specific Measured Depth and Porosity (%), as indicated within the mouse pointer display box, to another Measured Depth on the Porosity (%) track.
- 3. Release the mouse button and the Porosity (%) sub-interval will be drawn in green accordingly.
- 4. Repeat Steps 2 and 3 to add more Porosity (%) sub-intervals.
- 5. Press the Esc key on the keyboard to exit from the Porosity Builder window.

Deleting a Sub-Interval

- 1. Double click on the Porosity Grade layer to expand the Porosity(%) track and to activate the Porosity Builder window.
- On the Porosity(%) layer, right click anywhere <u>within</u> the green sub-interval that you wish to delete to activate the pop-up menu shown below:



- 3. Click on Delete Sub and the Porosity (%) sub-interval will be deleted accordingly.
- 4. Press the **Esc** key on the keyboard to exit from the **Porosity Builder** window.

How to Change the Porosity Grade Scale and grid pattern

Porosity Grade scale has to be changed through the Layer Configuration window.

- 1. Click on the Porosity Grade layer to make it active.
- 2. Click on the Layer Configuration button on the Toolbar. This will activate the Layer Configuration tab dialogue window.
- 3. Click on the Layer Scales tab.

Active Layer Configuration [Porosity]	
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age D	isplay Dip Meter Definitions
Save Undo	
Porosity Grade Scale Percent Layer Scale Dip Meter Scale	
Grain Size Scale Carbonate Texture Scale Left: 25 Right: 0	Depth-Axis Grid
Verbal Settings	Style: Full 💌
Grain Size Scales	Data-Axis Grid
Carbonte Texture Scales	Type: Linear 💌
 to 	Units: X
Dip Meter Quality Scale Range	Linear Cycles
From: 0 To: 1	Major Minor Increment
	5
	Log. Cycles:
ОК	Cancel Help

- 4. Notice that the default scale (when the porosity grade was originally added to the log) was 25 to 0. To change the original scale from 25 0 to 12 to 0, simply adjust the Left Scale value to 12 by double clicking in the Left Scale field and typing in a value of 12.
- 5. The user can also adjust the grid scale increments on the log in the Linear Cycles Increment portion of this window.
- 6. Click on the **System Message** window to exit the Layer Configuration window.

Interpreted Lithology Layer - Rock Type Builder

This window will allow you to draft on the Interpreted Lithology Layer. The user can utilize the accessory builder. The user may also define the basal contact if they have the Power*Core Module. We have revised this layer with respect to resizing a bed or interval. We have also added the Interbedding options to the builder.

Overview of Rock type builder window

Save Del		Rock Type		nterbeds	Accessory
1644	to 1653.5	SS SS SS	cg [sand cg]		-
🔽 Confirm Delete	Sample Quality:	·	No Data Descriptio	on:	
Snap to Lithology	Base Contact:	Glossifungites			

Save Button The user can enter the depths into the two depth fields with either a rock type or no data fields filled in

and then **click** on the Save **button**. Their interval will now be drawn on the Interpretive Lithology Track.

Del Button: The user can click on an existing interpretive lithology interval and the corresponding data will be shown

in the builder. The user can then **click** on the Del button to delete the interval.

Confirm Delete: This Check box when activated will prompt the user with a

Confirmation window Do you really want to delete? If this Confirm Delete is unchecked the Lithology Interval will be deleted without any system message.

Confirm	ation
2	Do you really want to DELETE
~	1627.50 to 1636.00?
	Yes No

Snap to Lithology This check box when activated will not allow spaces between beds on the Interpretive Lithology Layer when you are using the mouse (not the keypad)

when entering Lithology Intervals. This function utilizes the Mouse / Screen Pointer Accuracy on the Selection bar and it you are within 10 times the accuracy the Interval will snap to the lithology already drawn on your log.

Edit Favorites This button allows the user to get to the System Options Favorites Tab. The user would go into the

ΟK **Rock Favorites** make their changes and then click on the button in the System Options window.

Toolbox This button allows the user to Turn on or off the Toolbox.

Interbeds Once a Lithology interval has been defined or selected and can be viewed in the builder the user can click

Interbeds button to activate the Interbeds builder. on

Accessory This button allows the user to switch to the Accessory builder so they can add accessories to the Rock
type intervals they have defined in the Rock type builder.

1644 to 1653.5 ss cg [sand cg] The from and to fields are entered manually through the key board or can be activated through a mouse drag. The rock type drop box will have all the rock types that are in the system.

Sample Quality: Pool Questionabl

The Sample quality further defines the lithology interval with either Questionable or Poor sample quality symbols as shown on the right.

No Data Description: Lost Core Over Burden

This selection allows the user to define a Lithology interval on the with a no data description as shown on the right.



Base Contact: Glossifungites Once a Lithology interval has been defined or selected and can be viewed in the builder the user can click drop box and add a basal contact.

Clear Fields This button will clear all the fields in the Rock Type builder. The user can then start fresh. Exit This button will close down the Rock Type builder

Drafting an Interpreted Lithology Interval

1. **Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window as well as your Favorites List Toolbox.

ave Del		Rock Type		Interbeds	Accessory
1644	to 1653.5	Section as	cg [sand cg]		+
Confirm Delete	Sample Quality:	-	No Data Descrip	otion:	. 🗸
Snap to Lithology	Base Contact:	Glossifungites			-
t Favorites Toolbo	×		Clear	r Fields	Exit

- 2. Select a rock type. There are 4 ways to select a rock type, some faster than others.
 - The user can click on the desired Rock Type from the Favorites Toolbox shown to the right.
 - The user can **right click** anywhere within the **Interpretive Lithology** track to activate the pop-up menu shown below. Then select by **clicking once** on the desired **Rock Type** from the pop-up menu.
 - The user can select a **Rock Type** from the **Rock Type** field within the **Rock Type Builder** window, if the desired **Rock Type** is <u>not</u> displayed in the pop-up menu or Toolbox.
 - The user can also click on a previously drawn lithology that is the same as you wish to draw with. If
 done correctly the selected rock type will be automatically displayed in the Rock Type field within the
 Rock Type Builder window.



<u>Note</u>: The graphical images utilized in the pop-up menu represent specific **Rock Types** that can be edited by clicking on the <u>Edit Favorites</u> button by the user in the **System Options** window (See the **System Options** section).

3. The user can then select either a questionable interpretation or a poor sample quality from the Sample quality pull down menu.

Note: Once activated it must be deactivated by selecting the blank selection from the list.

4. Click and drag up or down within a specific track to define the lithology interval. Or, If there is a rock type defined above and below (within 100 meters) and you want to fill in the interval simply **double click** in the interval and it will fill in with the No data or Rock type selected.

Note: This can be done on any track but more often than not the Interpretive Lithology Track is the most convenient. With the Snap to Lithology activated the lithology being drawn will snap to the previous lithology either above or below depending on your drag if you are within 10 times the mouse pointer or screen accuracy of the already drawn lithology.

- 5. Release the mouse button and the interval will be drawn accordingly.
- 6. The user can now define the base contact type by right clicking on the drawn interpretive lithology interval and selecting the desired basal contact type from the ensuing pop out menu.



Note: The Toolbox can be activated or deactivated by clicking on the **Toolbox** button.

Drafting an Interpreted Lithology Interval with Interbedding.

1. **Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window as well as your Favorites List Toolbox.

Save Del		Rock Type	Int	erbeds	Accessory
1644	to 1653.5	Section ss	cg [sand cg]		-
Confirm Delete	Sample Quality:	-	No Data Description	: [
✓ Snap to Lithology	Base Contact:	Glossifungites			-



- 2. Select a rock type. There are 4 ways to select a rock type, some faster than others.
 - The user can **click** on the desired **Rock Type** from the Favorites Toolbox shown to the right.
 - The user can **right click** anywhere within the **Interpretive Lithology** track to activate the pop-up menu shown below. Then select by **clicking once** on the desired **Rock Type** from the pop-up menu.
 - The user can select a **Rock Type** from the **Rock Type** field within the **Rock Type Builder** window, if the desired **Rock Type** is <u>not</u> displayed in the pop-up menu or Toolbox.
 - The user can also **click** on a **previously drawn lithology** that is the same as you wish to draw with. If done correctly the selected rock type will be automatically displayed in the **Rock Type** field within the **Rock Type Builder** window.



3. Click and drag up or down within a specific track to define the lithology interval.

- 4. Release the mouse button and the interval will be drawn accordingly.
- 5. Right Click on the drawn lithology and select Interbedding from the pop out menu as shown below or Interbeds

Click on the lithology and Click on the button in the Rock Type Builder. This will activate the Interbed window also shown below.

	Interbedding
	Accessory Rock Type
	Main Lithology
	Image: Second secon
	Grain Size: vc snd [very coarse sand] 💌 to c pbl [coarse pebbles] 💌
	Coarsening Upwards 🔽 Finning Upwards 🗖
	Carbonate Texture:
	Coarsening Upwards 🔲 Finning Upwards 🔲
	Secondary Lithology -[Interbed]
Rocks 🕨	Ss [Sandstone]
Base Contact 🔸	Grain Size: vf snd [very fine sand] 💌 to f snd [fine sand] 💌
Save	Carbonate Texture:
Delete	
Acc Builder	Top Interbed % : 30 Base Interbed % : 50
Interbedding	Bedding Thickness
Edit Options 🕨	Decimeter (DM)
Exit	Save DEL Exit

- 1. Select the Main Lithology Grain Size or Carbonate Texture from and to from their respective drop boxes. If the Grain Size or Carbonate Texture is already filled in you can change it here or leave it as is.
- 2. In the Main Lithology section select Coarsening or Fining Upwards check boxes if you wish.
- 3. Select the Secondary Lithology (Interbed) from the drop box.
- 4. Fill in the Secondary Lithology Grain Size or Carbonate Texture from and to from their respective drop boxes if you wish.
- 5. Fill in the **Percentage** of Interbeds at the top of the interval and the base of the interval by typing in their respective percentages.
- 6. Select a bedding thickness from the Bedding Thickness drop box.
- 7. Select if the interbeds are inclined or not from the check box.
- Save 8. Click on the button
- Rock Type button. Also the user can 9. The user can now go back to the Rock type builder by **clicking** on the Accessory button. Or the user can exit the builder go to the accessory builder by clicking on the

Exit altogether by clicking on the button.

10. Press the Esc key on the keyboard to exit from the Rock Type Builder window.

How to Draw with an already drawn Interbedded Interval.

- 1. Double click anywhere within the Interpreted Lithology track to activate the Rock Type Builder window as well as your Favorites List Toolbox.
- 2. Click on an already drawn Interbedded Interval.
- 3. Click and drag up or down within a specific track to define a new interbedded lithology interval.
- 4. Release the mouse button and the interval will be drawn accordingly.
- 5. If you wish to change some of the attributes Right Click on the drawn lithology and select

Interbedding from the pop out menu or Click on the lithology and Click on the Interbeds button in the Rock Type Builder.

Deleting the Interbedded portion of an Interpreted Lithology Interval.

The following procedure will delete the Interbedding only. If you wish to delete the entire lithology delete the Lithology from the Rock type builder.

- 1. **Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window as well as your Favorites List Toolbox.
- 2. Right Click on the drawn lithology and select Interbedding from the pop out menu as shown below or

Click on the lithology and Click on the Interbeds button in the Rock Type Builder. This will activate the Interbed window also shown below.

	Interbedding
	Accessory Rock Type
	Main Lithology
	Sector Se
	Grain Size: vc snd [very coarse sand] 💌 to c pbl [coarse pebbles] 💌
	Coarsening Upwards 🔽 Finning Upwards 🗖
	Carbonate Texture:
	Coarsening Upwards 🧮 Finning Upwards 📕
	Secondary Lithology -[Interbed]
	Ss [Sandstone]
Rocks 🕨	Grain Size: vf snd [very fine sand] 💌 to f snd [fine sand] 💌
Base Contact → Save	Carbonate Texture: to
Delete	Top Interbed % : 30 Base Interbed % : 50
Acc Builder	
Interbedding	Bedding Thickness
Edit Options 🔸	Decimeter (DM)
Exit	Save DEL Exit

- 3. Click on the DEL button
- 4. The user can now go back to the Rock type builder by clicking on the Rock Type button. Also the user can go to the accessory builder by clicking on the Accessory button. Or the user can exit the builder altogether by clicking on the Exit button.
- 5. Press the Esc key on the keyboard to exit from the Interbedding window.

Drafting a Lithology Interval with Lost Core, No Sample or Overburden

1. **Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window shown below as well as your Favorites List Toolbox.

Rock Type Builder				K
Save Del	Rock Type		Interbeds Accessory	
1686	to 1693		•	
🔽 Confirm Delete	Sample Quality:	-	No Data Description: Lost Core]
🔽 Snap to Lithology	Base Contact:		<u></u>]
Edit Favorites Toolbo	ж		Clear Fields Exit	

2. Select either Lost Core, No Sample or Overburden from the No Data Description drop box.

- Click and drag the mouse button up or down within a specific track to define the No Data interval. Or, If there is a rock type defined above and below (within 100 meters) and you want to fill in the interval simply double click in the interval and it will fill in with the No data type selected.
- 4. **Release** the mouse button, and the interval will be drawn accordingly.
- 5. Press the **Esc** key on the keyboard to exit from the **Rock Type Builder** window.

Inserting Thin beds

You are able to insert thinner beds of a different **Rock Type** into an existing bed. This prevents you from having to reenter the properties of the main bed above and beneath the inserted thinner bed. The **Rock Accessories** (**Thin beds**, **Components**, **Matrix** and **Cement**) are the only properties that are not retained from the existing bed.

- 1. **Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window previously shown as well as your Favorites List Toolbox.
- 2. Select a rock type. There are 4 ways to select a rock type.
 - The user can click on the desired Rock Type from the Favorites Toolbox.
 - The user can **right click** anywhere within the **Interpretive Lithology** track to activate the pop-up menu shown below. Then select by **left clicking once** on the desired **Rock Type** from the pop-up menu.
 - The user can select a **Rock Type** from the **Rock Type** field within the **Rock Type Builder** window, if the desired **Rock Type** is <u>not</u> displayed in the pop-up menu or Toolbox.
 - The user can also **click** on a **previously drawn lithology** that is the same as you wish to draw with.
- 3. If done correctly the selected rock type will be automatically displayed in the **Rock Type** field within the **Rock Type Builder** window.
- 4. Click and drag the mouse button up or down within a specific track to define the Lithology interval.

Note: This can be done on any track but more often than not the Interpretive Lithology Track is the most convenient.

- 5. Release the mouse button, and you will be prompted with a message asking, "Do you want to add an interbedded interval?"
- 6. **Click** on the <u>Yes</u> button and the thinner bed will be drawn accordingly.
- 7. The user can now define the base contact type by right clicking on the drawn interpretive lithology interval and selecting the desired basal contact type.
- 8. Press the Esc key on the keyboard to exit from the Rock Type Builder window.

Resizing an Existing Rock Type or Bed

- 1. Double click on the Interpreted Lithology track to activate the Rock Type Builder window.
- 2. **Press and hold** the **Ctrl key** on the keyboard **down**, while moving the mouse pointer over the lithology bed boundary you wish to resize, the mouse pointer will turn into a resize **1**, (remember if two beds are
 - boundary you wish to resize, the mouse pointer will turn into a resize \star , (remember if two beds are touching to look into the builder to see if you have the correct one selected)
- 3. Clicking and dragging the left mouse button up or down the Interpreted Lithology track to either shrink or enlarge the selected interval.

<u>Note</u>: You are not allowed to overlap an existing bed (lithology) <u>entirely</u> and if you attempt to do so, you will receive an "*Unsupported Add Sequence*" system message.

4. Release the mouse button at the desired depth, followed by the release of the Ctrl key on the keyboard, and the following system message will be activated, "Do you really want to RESIZE the interval from _ to _ ?"

<u>Note</u>: Resizing a **Rock Type** will result in a resizing its associated bed restricted description category information, i.e. **Grain Size**, **Porosity Grade**, and so on.

5. Press the **Esc** key on the keyboard to exit from the **Rock Type Builder** window.

Deleting an Existing Rock Type or Bed

- 1. Double click on the Interpreted Lithology track to activate the Rock Type Builder window.
- 2. Right click anywhere within the Interpreted Lithology track to activate the pop-up menu.

POWER SUITE Addendum User Manual Version 9.0



 Click on Delete selection. This will activate a confirmation window shown above. Click on the Ves

button to confirm the deletion.

<u>Note</u>: When you delete a **Rock Type**, you will also delete its associated bed restricted rock description information, i.e. **Grain Size**, **Porosity Grade**, **Type**, **Oil Show** and all other bed restricted data.

4. Press the **Esc** key on the keyboard to exit from the **Rock Type Builder** window.

Interpreted Lithology Layer - Rock Accessory Builder

The Rock Accessory Builder allows you to add accessories to a Rock Type in the Interpretive Lithology layer.

Drawing Accessories

- 1. Double click anywhere within the Interpretive Lithology layer to activate the Rock Type Builder.
- Right click anywhere within the Interpretive Lithology layer to activate the pop-up menu shown below, or click on the Accessory button in the Rock Type Builder window:

	-
Rocks	۲
Base Contact	۲
Save	
Delete	
Acc Builder	
Interbedding	
Edit Options	۲
Evit	

Toolbo	x 🔀	
Favorite	Favorite List	
e	~	
24	_	
F		
~		
₩ U		
00		
mx		
*		
•		
ø		
P		
E		
	~	
,		

3. Select Acc Builder selection from the pop-up menu to activate the Rock Accessory Builder window and the Accessory Favorites List Toolbox.

🙈 alg nn desc (Algae non descript)

Rock Accessory Builder

Thinbed:

Matrix:

Cement

Contact: Edit Favorites Toolbox

Component:

- 4. Select an Accessory. There are 3 ways to select an accessory, some faster than others.
 - The user can click on the desired Accessory Symbol from the Favorites Toolbox.
 - The user can **right click** anywhere within the **Interpretive Lithology** track to activate the pop-out menu. Then **select accessories** to initiate the favorite's list pop out menu and **click** on the desired **Accessory Symbol** from the pop-out menu.

Rock Type

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Exit

• The user can **select** an **Accessory Symbol** from the appropriate **Accessory Type** fields within the **Accessory Type Builder** window, if the desired **Accessory Type** is <u>not</u> displayed in the favorite's list pop-up menu or Toolbox.



Note: The user can get easily to the first letter of the Accessory they wish to select by clicking once in the appropriate field in the Rock Accessory builder to highlight a selection and then typing in the first letter of the component they wish to choose. This will refresh the list with the first letter and then the user can scroll through the selection until they see their selection and **click** to select.

5. Click anywhere within the Interpretive Lithology track to insert the selected Accessory.

The Toolbox can be activated or deactivated by clicking on the	button within the Rock Accessory Builder
Window.	

Drawing an Internal Bedding Contact

This selection is only available to the users who have the Power*Core Module

- 1. Double click anywhere within the Interpretive Lithology layer to activate the Rock Type Builder.
- 2. Right click anywhere within the Interpretive Lithology layer to activate the pop-up menu shown below, or

click on the Accessory button in the Rock Type Builder window:

Rocks	۲
Base Contact	۲
Save	
Delete	
Acc Builder	
Edit Options	۲
Exit	

- 3. Click on the Acc Builder selection from the pop-up menu to activate the Rock Accessory Builder window and the Accessory Favorites List Toolbox.
- 4. The user has 2 ways to choose an internal bedding contact.
 - The user can select a Contact Symbol from the Contact Type fields within the Accessory Type Builder window.

Rock Accessory Builder			
		Rock Type	
Thinbed:		•	
Component:	nn desc (Algae non descript)	•	
Matrix:		•	
Cement:		•	
Contact:		•	
Edit Favorites	Toolbox	Exit	

• Right click anywhere within the Interpretive Lithology track to activate the pop- out menu. Then click on the Contact selection to initiate the pop out menu and click on the desired Internal Contact from the pop-out menu.

Accessories	•	
Contact	•	Bioturbated
Delete		Bored
Rock Builder		Burrowed
Edit Options	•	Caliche / Calcrete
Luic Options	-	Corrosional
E×it		Dessication Cracks
		Erosional
		Exposure
		Firm Ground
		Flood Surface
		Glossifungites
		Gradational
		Hardgrounds
		Inclined
		Irregular
		Max Flood surface
		Mud Cracks
		Nodular
		Parasequence Boundary
		Ravinement Surface
		Regressive Surface of Erosion
		Rooted
		Scour
		Sequence Boundary
		Sharp
		Transgressive surface of Erosion
		Truncation
		Unconformity
		Wavy

5. Click anywhere within the Interpretive Lithology track to insert the selected Accessory.

Moving a Thinbed, Components, Internal Contact, Matrix, or Cement

- 1. With the **Rock Accessory Builder** window activated **click and drag** the **Accessory symbol** you wish to move and drag the red box to the new location.
- 2. Release the mouse button and the accessory or internal contact will be redrawn at the new position.

Deleting a single Thin bed, Components, Internal Contact, Matrix, or Cement

1. With the **Rock Accessory Builder** window activated **right click** (in the upper right corner) of the **Accessory** symbol you wish to delete and the pop-out menu will be activated.



- 2. Click on the Delete selection from the pop-out menu and the selected Accessory symbol will be deleted.
- 3. Press the Esc key on the keyboard to exit from the Rock Accessory Builder window.

Deleting Multiple Thin beds, Components, Internal Contacts, Matrix, or Cements

- 1. With the Rock Accessory Builder window activated Press and Hold the SHIFT Key and then click and drag an area where the symbols are that you want to delete.
- 2. Release the mouse button and this will activate a message.

Confirm Multiple Delete 🛛		
Delete these Accessories?		
Yes	No	

3. Click on the Yes button. The accessories that were covered by your drag will be deleted.

Note: Every type of layer in Power*Log/Curve has a Data Type classification. The default settings for the

Interpreted Lithology layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the Interpreted Lithology layer is active.

Annotation Builder

These toolbars allow you to add, edit, move or delete Annotations / Lithology Descriptions in an Annotation or Lithology Description track.

<u>Note</u>: There is an annotation layer available throughout the whole log that allows you to add, edit and delete an annotation anywhere within the log. Refer to the Log Layer section within chapter 2.



Overview of RTF Font Toolbar buttons.

F At the flashing cursor or with some text highlighted this button will activate a Font Dialogue window to change Font Type, style, size etc.

B At the flashing cursor or with some text highlighted this button will activate a Bold Font style.

At the flashing cursor or with some text highlighted this button will activate an Italic Font style.

At the flashing cursor or with some text highlighted this button will activate an Underline Font style.

At the flashing cursor or with some text highlighted this button will activate an Strikethrough Font style.

토 호 클 At the flashing cursor or with some text highlighted these buttons will orient the text line or paragraph left, centered or right within the box outline.

At the flashing cursor or with some text highlighted this button will place a bullet at the start of the text line or paragraph.

At the flashing cursor or with some text highlighted these buttons will indent or tab the text line or paragraph either left or right.

At the flashing cursor or with some text highlighted this button will activate a new Font color.



Overview of RTF Lines and Boxes Toolbar buttons.



EXAMPLE Left Right Centered Text boxes: With the text box or annotations outline activated these buttons will orient the text box left, centered or right within the track borders. The user can also click and drag on the box outline to any orientation on the track which will override these buttons.



Display scale drop box: This allows the user to change the display scale for each annotation to adapt to the printed or viewing scale of the log. The All Scales selection will display the annotation at all viewing and printing scales from 1:5 to 1:5000. If you select a different display scale then the annotation will be viewed at that viewing and printing scale and smaller. Anything larger than the display scale and the annotation will not be viewed or printed. This should alleviate the annotations overlapping each other when printed out on different scales. For example if the user were to choose 1:120 the annotation would show up on viewing / printing scales from 1:120 to 1:5 and not show up on scales from 1:121 to 1:5000.



only have one

Wavy Sine Wave Straight Line Style Selector and Line Thickness drop boxes: These drop the user to select a different line style for their drawn line as well as the for the line that is associated with each individual annotation. You can line per annotation. The line can only be redrawn and not moved.

A

This button will show / hide the text for a particular annotation.

This button will show / hide the line for a particular annotation.

This button will show / hide an outline around the annotation. The grey box you see around all annotations will not be printed. Only when this button is activated will the box be printed.

Will show / hide an arrow pointer at the end of a line draw.

Will show / hide an arrow pointer at the start of a line draw.

Will show / hide an tail at the end of a line draw.

Will show / hide an tail at the start of a line draw.

Adding Annotations / Lithology Descriptions...

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- Define an area or box outline by clicking and dragging the left mouse button from the upper left corner to the lower right corner of the desired area to form a rectangular shape and then releasing the left mouse button on an Annotation layer to activate the RTF Font and RTF Lines and Boxes toolbars shown below.



- 3. Click once more in the drawn area and you will get a flashing cursor.
- 4. Type in your annotation.

- 5. Utilize the options in the **RTF Font** and **RFT line and box toolbars** to get the desired effect on your annotation.
- 6. Click anywhere outside the annotation box to close the toolbars. Repeat steps 2-6 for more annotations.



Drawing a Line...

A Line can be associated with an existing Annotation/Lithology Description or it can exist on its own.

How to Draw a line in the Annotations / Lithology Descriptions...

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- Define an area or box outline by clicking and dragging the left mouse button from the upper left corner to the lower right corner of the desired area to form a rectangular shape and then releasing the left mouse button on an Annotation layer to activate the RTF Font and RTF Lines and Boxes toolbars shown below. Or just click on an existing annotation that does not have a line associated with it.



- 3. Click and drag the mouse and a line will be drawn. The drag must start anywhere outside the highlighted or drawn area of your highlighted annotation and inside the confines of the track and remain inside the track boundaries.
- 4. Release the mouse and the line will be drawn. Utilize the *buttons for arrow heads and tails. Also line style and thickness drop boxes can be used to further define your drawn line.*
- 5. Repeat step 3 to redraw the line.
- 6. Click anywhere outside the annotation box to close the toolbars. Repeat steps 2-6 for more annotations.

Editing Annotations/Lithology Descriptions...

- 1. Make the Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. Click in annotation field box to highlight the field and activate the RTF Toolbars.
- 3. Edit this field as you normally would utilizing the keypad, mouse and toolbars to edit anything inside this annotation field or add a line.
- 4. Click outside of the highlighted text field to close the toolbars.
Resizing Annotations/Lithology Descriptions...

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. Click in annotation field box to highlight the field and activate the RTF Toolbars.
- 3. Place the mouse pointer over one of small boxes (□) used to define the outline around the **Annotation/Lithology Description** and the mouse pointer will transform into a double arrow(\$).
- 4. Click and drag the mouse pointer to define the new size for the Annotation.
- 5. **Release** the **mouse button**, and the Annotation/Lithology Description will be redrawn within its newly defined area.
- 6. **Click outside** of the highlighted text field to close the toolbars.

Moving Annotations/Lithology Descriptions...

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. Click on annotation field box to highlight the field and activate the RTF Toolbars.
- 3. Move the mouse pointer <u>on</u> the highlight surrounding the selected **Annotation/Lithology Description** and the mouse pointer will transform into the shape of a cross with four \bigoplus arrows.
- Click and drag the mouse pointer to the Annotation's/Lithology Description's new position.
- Release the mouse button, and the Annotation/Lithology Description will be redrawn at its new location.
- Click outside of the highlighted text field to close the toolbars.

Deleting Annotations/Lithology Descriptions...

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. Click in annotation field box outline to highlight the field and activate the RTF Toolbars.
- 3. Right Click anywhere within the Annotation field that is highlighted to activate the pop-up menu.



4. Click on Delete selection and you will receive the following system message.



- 5. Click on accordingly. Yes button and the selected Annotation/Lithology Description will be deleted
- 6. Click outside of the highlighted text field to close the toolbars.

Using the List functionality to copy, move to and delete annotations.

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. **Right Click** anywhere within the track borders (not inside an active annotation) to activate the pop out menu shown below.



3. Click on the List Selection. This will activate a List box shown below.

Annotation List
B25 625 - 630m Ss: It gy, It gy brn, I - vc gr, modly st, sbrdd - sbang, qtz, com micas fiks, oc 80.92 1600 - 1610m ss: It gy, with I mg It, w st, sbrdd 144.98 145m Ss: It gy, It brn, It gy brn, f gr grdg - st, w st, sbrdd, qtz, tr carb fiks, v arg, (1609) 160.91 165m Sh: a. 170.62 170m Ss: wh, It gy, It gy brn, f - c gr, modly w st, sbrdd, -sbang, qtz, com micas fiks 600.42 610 - 615m Ss: It gy, It gy brn, m - vc gr, occly f gr, modly w st, sbrdd - sbang, qt 620 620 - 620m Ss: It gy, It gy brn, m - vc gr, occly f gr, modly w st, sbrdd - sbang, qt 620 620 - 620m Ss: It gy, It gy brn, m - vc gr, occly f gr, modly w st, sbrdd - sbang, qt 620 620 - 630m Ss: It gy, It gy brn, r - vc gr, modly st, sbrdd - sbang, qtz, com micas fiks 630 630 - 635m Ss: It gy, It gy brn, f - vc gr, modly st, sbrdd - sbang, qtz, com micas fiks 630 635m Ss: It gy, It gy brn, f - vc gr, modly st, sbrdd - sbang, qtz, com micas fiks 630 640 - 645m Ss: It gy, It gy brn, f - vc gr, modly st, sbrdd - sbang, qtz, com micas fiks 625 630m Ss: It gy, It gy brn, f - vc gr, modly st, sbrdd - sbang, qtz, com micas fiks 640 - 640 - 645m Ss: It gy, It gy brn, f - vc gr, modly st, sbrdd - sbang, qtz, com micas fiks, occ 641, fr chino, predy disagad, ptch chy mtx, occ trs dolic cmt, pyric ip, g est intgran por (16-20%), tr ptch brn o stng, bri yel flor, p stmg bri
Delete Move To Copy to Clip Exit

- 4. To **delete** an Annotation with the list active scroll through the list and **click** on the **annotation** you wan to
- delete. Click on the button. This will delete the annotation.
 5. To Move to a depth where an Annotation can be found with the list active scroll through the list and click on
 - the **annotation** you wan to move to. **Click** on the **Move To button**. This will move you to see the annotation on the log.
- 6. To **Copy** an Annotation with the list active scroll through the list and **click** on the **annotation** you wan to
 - move to. Click on the button.
- 7. Define an area or box outline by clicking and dragging the left mouse button from the upper left corner to the lower right corner of the desired area to form a rectangular shape and then releasing the left mouse button on an Annotation layer to activate the RTF Font and RTF Lines and Boxes.
- 7. Click once more in the drawn area and you will get a flashing cursor.
- 8. **Right Click** anywhere within the Annotation field that is highlighted to activate the pop-up menu.



8. Click on the Copy Selection and you will see your annotation refreshed from what was copied to the clipboard in step 6.

Globally Change the Annotation Font Properties.

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. **Right Click** anywhere within the track borders (not inside an active annotation) to activate the pop out menu shown below.

	Font		? 🛛
	Font: Arial Narrow Arial Black Arial Narrow O Book Antiqua O Book Antiqua O Bookshelf Symbol O Century Gothic	Regular 8 C Italic 9 Bold Bold Italic 12	OK ancel
List Char Resize to Track Box	ige Font Sizes Inge Font Color Alignments ▶ Inge Display Scale	Sample AaBbYyZz Script:	

- 3. Click on the Change Properties (Range) selection and this will activate another pop out menu.
- 4. Click on the Change Font Sizes selection to activate the Font Window shown above.
- 5. Select the appropriate Font, Font Style and Size from their drop boxes.
- 6. Click on the

button. This will activate the Format range window.

Format Ra	inge	×
Depth Interval:	(Use 0 to 0 for the whole log) 0 to 0	OK
		Cancel

- 7. Enter specific values into the **Interval** (From) and **Interval** (To) fields, if you are changing the font size for a specific interval of **Annotations**. Otherwise, leave the **Interval** (From) and **Interval** (To) fields defaulted to the numeral zero (0) for every **Annotation** on the log.
- 8. **Click** on the **Button**. This will change the annotations over the interval specified in the range window for that annotation layer.

Globally Change the Annotation Font Color.

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. **Right Click** anywhere within the track borders (not inside an active annotation) to activate the pop out menu shown below.

		Color 🛛 🛛 🔀
		Basic colors:
		Custom colors:
Change Properties (Range) 🔸	Change Font Sizes	
List	Change Font Color	
Resize to Track	Box Alignments 🔹 🕨	
Edit Options	Change Display Scale	Define Custom Colors >>
Exit		OK Cancel

- 3. Click on the Change Properties (Range) selection and this will activate another pop out menu.
- 4. Click on the Change Font Color selection to activate the Color Window shown above.
- 5. **Select** the **Color** from the Color palette or define a custom color.
- 6. **Click** on the **DK button**. This will activate the Format range window.



- 7. Enter specific values into the **Interval** (From) and **Interval** (To) fields, if you are changing the font size for a specific interval of **Annotations**. Otherwise, leave the **Interval** (From) and **Interval** (To) fields defaulted to the numeral zero (0) for every **Annotation** on the log.
- 8. Click on the **Button**. This will change the annotations over the interval specified in the range window for that annotation layer.

Globally Change the Annotation Box Alignments.

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. Right Click anywhere within the track borders (not inside an active annotation) to activate the pop out menu shown below.



- 3. Click on the Change Properties (Range) selection and this will activate another pop out menu.
- 4. Click on the Box Alignments selection to activate another pop out menu.
- 5. Select either left Center or Right from the pop out menu. This will activate the Format range window.



- 6. Enter specific values into the **Interval** (From) and **Interval** (To) fields, if you are changing the font size for a specific interval of **Annotations**. Otherwise, leave the **Interval** (From) and **Interval** (To) fields defaulted to the numeral zero (0) for every **Annotation** on the log.
- 7. Click on the **Button**. This will change the annotations over the interval specified in the range window for that annotation layer.

Globally Change the Annotation Display Scale.

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. **Right Click** anywhere within the track borders (not inside an active annotation) to activate the pop out menu shown below.



- 3. Click on the Change Properties (Range) selection and this will activate another pop out menu.
- 4. Click on the Change Display Scale selection to activate the Select Scale Window.

—
ОК
Cancel

5. Choose the appropriate scale from the drop box.

6.	Click on the	OK	button.	This will activate	the Format ran	ge window.
----	--------------	----	---------	--------------------	----------------	------------

Format R	ange			×
Depth Interval:	(Use 0 to 0	for the whole log) to 0	OK]
			Cancel	

- 7. Enter specific values into the **Interval** (From) and **Interval** (To) fields, if you are changing the font size for a specific interval of **Annotations**. Otherwise, leave the **Interval** (From) and **Interval** (To) fields defaulted to the numeral zero (0) for every **Annotation** on the log.
- 8. **Click** on the **Button**. This will change the annotations over the interval specified in the range window for that annotation layer.

Globally Change the Box placements to fit in the Track width.

- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. **Right Click** anywhere within the track borders (not inside an active annotation) to activate the pop out menu shown below.

Change Properties (Range) List	۲
Resize to Track	
Edit Options	۲
Exit	

3. Click on the Resize to track selection. This will activate the Format range window.



- 4. Enter specific values into the **Interval** (From) and **Interval** (To) fields, if you are changing the font size for a specific interval of **Annotations**. Otherwise, leave the **Interval** (From) and **Interval** (To) fields defaulted to the numeral zero (0) for every **Annotation** on the log.
- 5. Click on the **DK** Button. This will change the annotations over the interval specified in the range window for that annotation layer.

Carbonate Texture Layer

This layer gives the user the ability to add, delete, or change Entire Intervals and/or Sub-intervals of Carbonate Textures for any given Interpreted Lithology (Rock) Interval.

Definitions of an Entire Interval and a Sub-interval will help you to visualize how the system handles data on an interval basis.

Entire Interval: An entire interval is one that is pertinent to an entire rock unit or bed. An entire interval cannot be added until a bed exists.

Sub-interval: A sub-interval can be of any thickness (less than the entire rock unit or bed) and can rest within an entire interval or can stand alone as a sub-interval without being part of an entire interval. You can have as many sub-intervals as you wish. If you enter a sub-interval equal to the rock unit or bed, the sub-interval will become an entire interval.

Snap to Closest Lithology Snap to closest lithology: When checked allows the user to find the top or bottom of an interval easily with the mouse pointer as you have to be within 10 times the mouse pointer or screen accuracy of the interval to catch the top or bottom with a drag.

Double Click Interval Entry Dbl Click Interval Entry: When checked will allow the user to enter a Carbonate Texture over an entire interval with a double click on the left mouse button.

Soft Edges Soft Edges: When checked will round off the Carbonate Textures and will present the Carbonate Texture edges with sine wave lines instead of strain lines.





Carbonate Texture No Pattern Hard edges

Carbonate Texture Pattern Soft edges

Note: If the Grain Size track contains two headings that overlap, click on Layer Configuration under the Options menu selection and uncheck the
☐ Display Layer Name or Curve Scale on Track check box ☐. Then click on the
☐ OK

button.

How to Change the Carbonate Texture Pattern from a Solid Color to a Hatching Pattern on your log.

This can only be represented with the Lithology Profile deactivated Lithology Profile

- 1. Click on System Options selection under the Options menu selection. This will activate the System Options tab dialogue window.
- 2. Click on the Display Tab
- Carbonate Textures Fill Pattern Downward hatch (left to right) at 45 degrees vard hatch (left to right) at 45 degr Upward hatch (left to right) at 45 degrees Horizontal and vertical crosshatch Then select the Carbonate Texture pattern from the Fill pattern 3. Crosshatch at 45 degrees list drop box. Select the Foreground Color (Line Color) from the Pattern Color: selector button. 4. OK. Click on the button after you have changed your selection. 5.
- 6. You may also have to change the background color of the Carbonate Texture as well. To do this **click** on the **Carbonate Texture layer**.

- 7. Click on the Layer configuration selection under the Edit pull down menu. This will activate the Layer configuration tab dialogue window.
- 8. Click on the Foreground Color: black drop box and select (in this case a background color) for your grain size. ΟK Click on the button. 9

Adding an Entire Interval

Note: All description categories, such as Carbonate Texture, are associated with a Rock Type and must have a Rock Type in order to be saved to the database. Therefore, you cannot add an entire interval or sub-interval of Carbonate Texture, until there is a rock unit or bed interval added to the Interpreted Lithology Layer for that interval.

1. Double click on the Carbonate Texture layer to expand the Carbonate Texture track and to activate the Carbonate Texture Builder window.

Carbonate Texture Bu	ilder 🛛	×
Save Del	Not Selected	
Entire Interval:	💌 to 🔍]
	Sequence:]
Sub-Interval:	T to]
	Sequence:]
🔽 Snap to closest lithology		
Dbl Click Interval Entry	✓ Soft Edges	

- 2. Click and drag the mouse pointer from a specific Measured Depth and Carbonate Texture, as indicated within the mouse pointer display box, to another Measured Depth and Carbonate Texture, e.g. 188.00
 - 188.00 [Floatstone] 190.20 [Rudstone]
- [floatstone] to 190.20 [rudstone], on the Carbonate Texture track. Release the mouse button and the entire Carbonate Texture interval will be drawn accordingly.

3.

Note: If you want to fill in the entire interval with only one Carbonate Texture and not a range of textures and you have the Dbl Click Interval Entry selected in the builder simply double click in the interval the carbonate texture you wish to enter and it will fill in the entire interval with your selection.

4. If you wish to see a different type of sequence and the user has previously dragged the entire interval, right click within the interval to be changed and select the Entire Interval Sequence selection and select one of the appropriate selections. The grain size appearance will be redrawn to reflect the newly selected



- 5. Repeat Steps 2 4 to add more Carbonate Textures.
- Press the Esc key on the keyboard to exit from the Carbonate Texture Builder window. 6.

Note: If you have already added a sub-interval and are now adding an entire interval, the sub-interval will now take priority.

Deleting an Entire Interval

criteria.

- Double click on the Carbonate Texture layer to expand the Carbonate Texture track and to activate the 1. Carbonate Texture Builder window.
- 2. On the Carbonate Texture layer, right click anywhere within the interval that you wish to delete to activate the pop-up menu.



- 3. Click on Delete Entire and the Carbonate Texture will be deleted accordingly.
- 4. Press the Esc key on the keyboard to exit from the Carbonate Texture Builder window.

Adding a Sub-Interval

- 1. **Double click** on the **Carbonate Texture** layer to expand the **Carbonate Texture** track and to activate the **Carbonate Texture Builder** window.
- 2. Click and drag the mouse pointer from a specific Measured Depth and Carbonate Texture, as indicated within the mouse pointer display box, to another Measured Depth and Carbonate Texture within an entire

		•
	1205.80 [Packstone]	
Carbonate Texture interval.	1209.60 [Floatstone]	

<u>Note</u>: You can drag the pointer to the left or right of the **Grain Size** track to more accurately describe your grain size range.

3. Release the mouse button and the Carbonate Texture sub-interval will be drawn.

Carbonate Tex	ture Builder	X
Save Del	1707.50 to 1712.50	
Entire Interval:	v to	•
	Sequence:	•
Sub-Interval:	pkst [Packstone]	-
	Sequence:	•
🔽 Snap to closest	lithology	
🔽 Dbl Click Interva	al Entry 🔽 Soft Edges	

4. If you wish to see a different type of sequence and the user has previously dragged a subinterval, right click within the subinterval to be changed and select the SubInterval Sequence selection and select one of the appropriate selections. The grain size appearance will be redrawn to reflect the newly selected criteria.



5. Press the Esc key on the keyboard to exit from the Carbonate Texture Builder window.

Deleting a Sub-Interval

- 1. **Double click** on the **Carbonate Texture** layer to expand the **Carbonate Texture** track and to activate the **Carbonate Texture Builder** window.
- 2. On the **Carbonate Texture** layer, **right click** anywhere <u>within</u> the sub-interval that you wish to delete to activate the pop-up menu.

	Delete Sub	
	Delete Entire	
	Entire Interval Sequence	×
	SubInterval Sequence	×
~	Soft Edge	
	Hard Edge	
	Edit Options	۲
	Exit	

- 3. Click on Delete Sub and the Carbonate Texture sub-interval will be deleted accordingly.
- 4. Press the Esc key on the keyboard to exit from the Carbonate Texture Builder window.

<u>Note</u>: Every type of layer in **Power*Log**, **Power*Core and Power*Curve** has a **Data Type** classification, so the system knows what default settings to use when adding the layer to the log. The Layer Configuration window shows the default settings for the **Carbonate Texture** layer.

- 1. Select the left and right carbonate texture scales from the Carbonate Texture Scale drop boxes.
- 2. Click on the **System Message** window to exit the Layer Configuration window.

Carbonate Texture Matrix Layer

This layer allows the user to log two carbonate textures (bimodal carbonate texture) at the same depth. The layer gives the user the ability to add, delete, or change Entire Intervals and/or Sub-intervals of Carbonate Textures for any given Interpreted Lithology (Rock) Interval.

Definitions of an Entire Interval and a Sub-interval will help you to visualize how the system handles data on an interval basis.

Entire Interval: An entire interval is one that is pertinent to an entire rock unit or bed. An entire interval cannot be added until a bed exists.

Sub-interval: A sub-interval can be of any thickness (less than the entire rock unit or bed) and can rest within an entire interval or can stand alone as a sub-interval without being part of an entire interval. You can have as many sub-intervals as you wish. If you enter a sub-interval equal to the rock unit or bed, the sub-interval will become an entire interval.

Snap to Closest Lithology Snap to closest lithology: When checked allows the user to find the top or bottom of an interval easily with the mouse pointer as you have to be within 10 times the mouse pointer or screen accuracy of the interval to catch the top or bottom with a drag.

Double Click Interval Entry Dbl Click Interval Entry: When checked will allow the user to enter a Carbonate Texture over an entire interval with a double click on the left mouse button.

Soft Edges Soft Edges: When checked will round off the Carbonate Textures and will present the Carbonate Texture edges with sine wave lines instead of strain lines.





Carbonate Texture No Pattern Hard edges

Carbonate Texture Pattern Soft edges

POWER SUITE Addendum User Manual Version 9.0

If the user has the Carbonate Texture Matrix layer added to the Carbonate Texture track, the user should verify that the Lithology Profile C check box is not activated. Click on System Options (Display Tab), under the Options menu

selection, and then uncheck the Lithology Profile C check box. Then click on the Save button.

Note: If the Carbonate Texture track contains two headings that overlap, click on the Edit pull down menu, select
Layer Configuration and uncheck the 🔽 Display Layer Name or Curve Scale on Track. Then click on the Save
button.

Adding an Entire Interval

<u>Note</u>: All description categories, such as **Carbonate Texture Matrix**, are associated with a **Rock Type** and must have a **Rock Type** in order to be saved to the database. Therefore, you cannot add an entire interval or sub-interval of **Carbonate Texture Matrix**, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

- 1. Make the **Carbonate Texture Matrix** layer active within the **Carbonate Texture** track by clicking on the track and then selecting the **Grain Size Matrix** layer from the **Layer Selection List** field
- 2. Double click on the Carbonate Texture Matrix layer to expand the Carbonate Texture track and to activate the Carbonate Texture Matrix Builder window.

Carbonate Texture Matrix Builde	, 🔀
Save Del	1675.00 to 1680.50
Entire Interval: mdst [Mudstone]	to mdst [Mudstone] ✓
	Sequence:
Sub-Interval:	▼ to
	Sequence:
Snap to closest lithology	
🔽 Dbl Click Interval Entry 🛛 🔽 Soft Edg	88

3. Click and drag the mouse pointer from a specific Measured Depth and Carbonate Texture, as indicated within the mouse pointer display box, to another Measured Depth and Carbonate Texture, e.g. 1204.00



[floatstone] to 1209.60 [rudstone], on the Carbonate Texture track. [1209.60 [Rudstone]] 4. Release the mouse button and the entire Carbonate Texture Matrix interval will be drawn accordingly.

Note: If you want to fill in the entire interval with only one Carbonate Texture and not a range of textures and you have the **V** Dbl Click Interval Entry selected in the builder simply double click in the interval the carbonate texture you

have the Dbl Click Interval Entry selected in the builder simply double click in the interval the carbonate texture you wish to enter and it will fill in the entire interval with your selection.

5. If you wish to see a different type of sequence and the user has previously dragged the entire interval, right click within the interval to be changed and select the Entire Interval Sequence selection and select one of the appropriate selections. The carbonate texture matrix appearance will be redrawn to reflect the newly selected criteria.

	Delete Sub		
	Delete Entire	,	
	Entire Interval Sequence	×	Fining Upwards
-	SubInterval Sequence Soft Edge Hard Edge	•	Coarsening Upwards Blocky
	Edit Options	•	
	Exit		

6. Repeat Steps 2 - 4 to add more Carbonate Texture Matrixes.

<u>Note</u>: The intervals that belong to the active layer are purple. The non active layers data are black, e.g. the intervals within the Carbonate Texture Matrix layer are purple while the intervals within the Carbonate Texture layer are black. Also, if you have already added a sub-interval and are now adding an entire interval, the sub-interval will now take priority.

7. Press the **Esc** key on the keyboard to exit from the **Carbonate Texture Builder** window.

Deleting an Entire Interval

- 1. Make the **Carbonate Texture Matrix** layer active within the **Carbonate Texture** track by clicking on the track and then selecting the **Carbonate Texture Matrix** layer from the **Layer Selection List** field
- 2. **Double click** on the **Carbonate Texture Matrix** layer to expand the **Carbonate Texture** track and to activate the **Carbonate Texture Matrix Builder** window.
- 3. On the **Carbonate Texture Matrix** layer, **right click** anywhere <u>within</u> the interval that you wish to delete to activate the pop-up menu.



- 4. Click on Delete Entire and the Carbonate Texture Matrix will be deleted accordingly.
- 5. Press the **Esc** key on the keyboard to exit from the **Carbonate Texture Matrix Builder** window.

Adding a Sub-Interval

- 1. Make the **Carbonate Texture Matrix** layer active within the **Carbonate Texture** track by clicking on the track and then selecting the **Carbonate Texture Matrix** layer from the **Layer Selection List** field
- 2. **Double click** on the **Carbonate Texture Matrix** layer to expand the **Carbonate Texture** track and to activate the **Carbonate Texture Matrix Builder** window.
- 3. Click and drag the mouse pointer from a specific Measured Depth and Carbonate Texture, as indicated within the mouse pointer display box, to another Measured Depth and Carbonate Texture within an entire

	1205.80 [Packstone]
Carbonate Texture Matrix interval.	1209.60 [Floatstone]

<u>Note</u>: You can drag the pointer to the left or right of the **Carbonate Texture** track to more accurately describe your carbonate texture range.

4. Release the mouse button and the Carbonate Texture Matrix sub-interval will be drawn.

Carbonate Tex	ture Matrix Builder	
Save Del	1653.50 to 1660.00	
Entire Interval:	🔽 to	•
	Sequence:	•
Sub-Interval:	mdst [Mudstone] 🗾 📩 to wkest [Wackestone]	-
	Sequence:	-
💌 Snap to closest	lithology	
Dbl Click Interval	al Entry 🔽 Soft Edges	

5. If you wish to see a different type of sequence and the user has previously dragged a subinterval, right click within the subinterval to be changed and select the Subinterval Sequence selection and select one of the appropriate selections. The carbonate texture appearance will be redrawn to reflect the newly selected criteria.



6. Press the Esc key on the keyboard to exit from the Carbonate Texture Builder window.

Deleting a Sub-Interval

- 1. Make the **Carbonate Texture Matrix** layer active within the **Carbonate Texture** track by clicking on the track and then selecting the **Carbonate Texture Matrix** layer from the **Layer Selection List** field.
- 2. Double click on the Carbonate Texture Matrix layer to expand the Carbonate Texture track and to activate the Carbonate Texture Matrix Builder window.
- 3. On the **Carbonate Texture Matrix** layer, **right click** anywhere <u>within</u> the sub-interval that you wish to delete to activate the pop-up menu shown below:

Delete Sub	
Delete Entire	_
Entire Interval Sequence	۲
SubInterval Sequence	۲
✔ Soft Edge	
Hard Edge	
Edit Options	Þ
Exit	

- 4. Click on Delete Sub and the Carbonate Texture Matrix sub-interval will be deleted accordingly.
- 5. Press the Esc key on the keyboard to exit from the Carbonate Texture Matrix Builder window.

How to Change the Carbonate Texture or Carbonate Texture Matrix Scales

Carbonate Texture scales can be changed through the Layer Configuration window.

- 1. Click on the Layer Configuration button on the Toolbar, when the Carbonate Texture or Carbonate Texture Matrix layer is active. This will activate the Layer Configuration window tab dialogue window
- 2. Click on the Layer Scales tab shown below.

Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo
Porosity Grade Scale Percent Layer Scale Dip Meter Scale Grain Size Scale Carbonate Texture Scale Left: 10 Right: 0 Verbal Settings Grain Size Scales Grain Size Scales Carbonte Texture Scales Boundstone to Dip Meter Quality Scale Range From: To:

the default settings for the **Carbonate Texture** layer.

- 3. Select the left and right carbonate texture scales from the Carbonate Texture Scale drop boxes.
- 4. Click on the **DK** button and select from the System Message window to exit the Layer Configuration window.

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Sedimentary Structures Layer

This layer allows you to add or delete sedimentary structures in the Power*Core application. There are two types of sedimentary structure layers. There is a **Bed Restricted (BR)** and a **Non-Bed Restricted (NBR)** layer types. The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding grain size) where you have to have a rock type in order to enter a sedimentary structure. The sedimentary structure is also restricted to the bed you are drawing in. Also, when the bed is resized or deleted the sedimentary structure may be also resized or deleted if the sedimentary structures interval coincides with the beds resized or deleted interval.

The **non-bed restricted (NBR)** layer type is not associated with any rock type or bed and can be entered anywhere within the track edges the user wishes and will not be affected by the resizing or deleting of a bed.

Adding a Sedimentary Structure

<u>Note</u>: All bed restricted description categories, such as **sedimentary structures (BR)**, are associated with a **Rock Type** and must have a **Rock Type** in order to be saved to the database. Therefore, you cannot add a sedimentary structure, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

1. Double click on the Sedimentary Structure track / layer to activate the Sedimentary Structures Builder

window and toolbox. The toolbox can be turned on or off by clicking on the **Toolbox** button in the builder.

Sedimentary Structures	
Bedding / Cross bedding	
	-
Laminations / Cross Laminations	
cppxlam [current ripple cross lamination]	•
Other	
	-
Abundance: Occasional	•
Dbl Click Interval Entry	Edit Favorites
🔽 Snap To Nearest	Toolbox
	Save
Top: Base:	Exit

- 2. Right click anywhere on the Sedimentary Structure track / layer to activate the pop-up menu.
 - Sedimentary Structures
 Abundance
 Delete
 Edit Options
 Exit
- Click on the Sedimentary Structures favorites list to activate the pop out menu and then select from the pop out list or click in the builders drop down menu selections to access the list provided in them. Either way once you have selected one it will be populated in the builder.



4. If an abundance is required, **right click** on the existing sedimentary structure, **Click** on the **Abundance** selection to activate the pop out menu and then select from the pop out list or click in the builders drop down menu selections to access the list provided in them. Either way once you have selected one, it will be populated in the builder.

Sedimentary Structures	Þ	1
Abundance	•	None
Delete		Trace
Edit Options	۲	Occasional Common
Exit		Abundant

- 5. Click and drag the mouse on the track / layer over the desired interval. Or If you just click your mouse on the track / layer. This will insert a subinterval of whatever was selected in step 3 and will be added to the layer / track at the depth you clicked at. The interval size is defaulted to the screen scale accuracy setting. The sedimentary structure interval will be drawn accordingly.
- 6. Double Click within an existing rock type interval in the Sedimentary Structure layer with the

Dbl Click Interval Entry activated and the entire interval will be filled in with the attributes that have been entered into the Sedimentary Structures window.

7. Click and drag the mouse on the track / layer close to an existing sedimentary structure (either above or

below in the same column) with the Snap To Nearest activated and there will be no spaces between the sedimentary structures. **Remember** you have to be within 10 times of the mouse pointer or screen accuracy from the previous symbol to have the snap to take effect.

<u>Note</u>: Regardless of the thickness of the interval that you have added to the log, at least one symbol will be drawn in the middle of the interval.

<u>Tip</u>: The **frequency of symbols** (if not utilizing the arrows subintervals) at any given scale is handled in the **Systems Options** window, under the **Options** menu selection. If you have selected 1 symbol every 2m at the **1:240** scale, you will get 1 symbol every 1m at the **1:120** scale, 1 symbol every 4m at the **1:480** scale, and so on.

8. Repeat **Steps 3 - 7** to add more sedimentary structures to the track.

Note: There are two ways how abundance can be shown. If in the System Options window you have checked

Arrowed Subintervals option, each interval will be displayed with a different line style which specifies the abundance you have selected. E.g. if occasional, an interval arrow will be displayed as a dashed line, while if abundant, an interval arrow will be displayed as a thick solid line. Otherwise, all symbols within an interval will be displayed in the certain color which specifies the abundance you have selected. E.g. if occasional, symbols will be blue, on the other hand if abundant, symbols will be red.

9. Press the **Esc** key on the keyboard to exit from the **Sedimentary Structure Builder** window.

Resizing an Interval

1. **Double click** on the **Sedimentary Structure** track / layer to activate the **Sedimentary Structure Builder** window.

Mouse Pointer Method

- Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends. If done correctly the mouse pointer will turn into a resize cursor
- Click and drag the mouse to the new desired top or bottom depth. Release the mouse button and the interval will be resized.

Keypad Method

1. Click once on the Sedimentary Structure you want to resize to bring it into the builder and change the from

or to depth and / or abundance and click on the Save button. Remember if it is a bed restricted layer that the top or bottom of the Lithology interval will take precedent.

Moving an Interval

- 1. **Double click** on the **Sedimentary Structure** track / layer to activate the **Sedimentary Structure Builder** window.
- Move the mouse pointer over the interval to be moved. Click and drag the interval to a new position. (The bed-restricted interval will not be allowed to move outside the interval of the lithology it is associated with.)

Deleting a Single Interval

1. **Double click** on the **Sedimentary Structure** track / layer to activate the **Sedimentary Structure Builder** window.



2. **Right click** anywhere <u>within</u> the interval you wish to delete to activate the pop-up menu.



- 3. Click on Delete and the Sedimentary Structure interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Sedimentary Structure intervals from the Sedimentary Structure track / layer.
- 5. Press the Esc key on the keyboard to exit from the Sedimentary Structure Builder window.

Deleting Multiple Intervals

1. **Double click** on the **Sedimentary Structure** track / layer to activate the **Sedimentary Structure Builder** window.

Sedimentary Structures	X
Bedding / Cross bedding	
	•
Laminations / Cross Laminations	
cppxlam [current ripple cross lamination]	-
Other	
	•
Abundance: Occasional	•
Dbl Click Interval Entry	Edit Favorites
🔽 Snap To Nearest	Toolbox
	Save
Top: Base:	Exit

- 2. Press and Hold the SHIFT Key and then click and drag an area anywhere within the intervals you wish to delete.
- 3. Release the mouse button to activate a Confirm Multiple Delete message.



- 4. Click on <u>Yes</u> button and the Sedimentary Structure interval encompassed with your drag will be deleted accordingly.
- 5. Press the Esc key on the keyboard to exit from the Sedimentary Structure Builder window.

POWER SUITE Addendum User Manual Version 9.0

Note: Every type of layer in Power*Log, Power*Core and Power*Curve has a Data Type classification. The defau		
settings for the Sedimentary Structures layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar , when the Sedimentary Structures layer is active.		
Configuration button on the Foolbar, when the Sedimentary Structures layer is active. Active Layer Configuration [SEDIMENTARY STRUCTURES] Variable Variable Save Undo Save Undo Name: Sedimentary Structures Variable Data Type: Ore Acc Variable Variable Data Type: Ore Acc Variable Variable Uwl Foreground Color: black Show Layer on Track Depth Offset: Display Vertical Orientation (Layer Name) Display Scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid Display Depth-Axis Grid Display Data-Axis Grid		
OK Cancel Help		

Bioturbation Layer

This layer allows you to add or delete Degrees or intensities of Bioturbation in the Power*Core application. There are two types of Bioturbation layers. There is a **Bed Restricted (BR)** and a **Non-Bed Restricted (NBR)** layer types.

The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding grain size) where you have to have a rock type in order to enter a degree of **Bioturbation**. The Degrees of Bioturbation are also restricted to the bed you are drawing in. Also, when the bed is resized or deleted the Degree of Bioturbation may be also resized or deleted if the trace fossils interval coincides with the beds resized or deleted interval.

The **non-bed restricted (NBR)** layer type is not associated with any rock type or bed and can be entered anywhere the user wishes and will not be affected by the resizing or deleting of a bed.

Adding a Degree of Bioturbation

<u>Note</u>: All bed restricted description categories, such as Degree of Bioturbation (BR), are associated with a Rock Type and must have a Rock Type in order to be saved to the database. Therefore, you cannot add a Degree of Bioturbation, until there is a rock unit or bed interval added to the Interpreted Lithology Layer for that interval.

1. Double click on the Bioturbation track / layer to activate the Bioturbations window.

Bioturbations 🛛 🗙		
 biotrbc [Bioturbated - churned] 		
Abundance: Common		
Dbl Click Interval Entry		
🔽 Snap To Nearest		
Top: 110.28 Base: 110.72		
Toolbox Save Exit		

2. Right click anywhere on the Bioturbation track / layer to activate the pop-up menu.



 Click on the Bioturbation selection to activate the pop out menu and then select from the pop out list or click in the builder drop down menu selections to access the list provided in them. Either way once you have selected one it will be populated in the builder.



4. **Click** on the **Abundance** selection to activate the pop out menu and then select from the pop out list or click in the builders drop down menu selections to access the list provided in them. Either way once you have selected one, it will be populated in the builder.



- 5. Click and drag the mouse on the track / layer over the desired interval. Or If you just click your mouse on the track / layer. This will insert a subinterval of whatever was selected in step 3 with the abundance that has been selected in step 4 and will be added to the layer / track at the depth you clicked at. The interval size is defaulted to the screen scale accuracy setting. The bioturbation interval will be drawn accordingly.
- Double Click within an existing rock type interval in the Bioturbation layer with the Dbl Click Interval Entry activated and the entire interval will be filled in with the attributes that have been entered into the Bioturbation window.
- 7. Click and drag the mouse on the track / layer close to an existing Bioturbation Symbol (either above or below in the same column) with the Snap To Nearest activated and there will be no spaces between the

bioturbations. **Remember** you have to be within 10 times of the mouse pointer or screen accuracy from the previous symbol to have the snap to take effect.

<u>Note</u>: Regardless of the thickness of the interval that you have added to the log, at least one symbol will be drawn in the middle of the interval.

<u>Tip</u>: The **frequency of symbols** (if not utilizing the arrows subintervals) at any given scale is handled in the **Systems Options** window, under **Options**. If you have selected 1 symbol every 2m at the **1:240** scale, you will get 1 symbol every 1m at the **1:120** scale, 1 symbol every 4m at the **1:480** scale, and so on.

8. Repeat **Steps 3 - 5** to add more degrees of Bioturbation to the track.

Note: There are two ways how abundance can be shown. If in the System Options window you have checked

Arrowed Subintervals option, each interval will be displayed with a different line style which specifies the abundance you have selected. E.g. if occasional, an interval arrow will be displayed as a dashed line, while if abundant, an interval arrow will be displayed as a thick solid line. Otherwise, all symbols within an interval will be displayed in the certain color which specifies the abundance you have selected. E.g. if occasional, symbols will be blue, on the other hand if abundant, symbols will be red.

9. Press the **Esc** key on the keyboard to exit from the **Bioturbation Builder** window.

Resizing an Interval

4. Double click on the Bioturbation track / layer to activate the Bioturbations window. Mouse Pointer Method

5. Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends. If done

correctly the mouse pointer will turn into a resize cursor \downarrow .

6. Click and drag the mouse to the new desired top or bottom depth. Release the mouse button and the interval will be resized.

Keypad Method

2. Click once on the Bioturbation Symbol you want to resize to bring it into the builder and change the from or

to depth and / or abundance and **click** on the **Save button**. Remember if it is a bed restricted layer that the top or bottom of the Lithology interval will take precedent.

Moving an Interval

- 1. Double click on the Bioturbation track / layer to activate the Bioturbations window.
- Move the mouse pointer over the interval to be moved. Click and drag the interval to a new position. (The bed-restricted interval will not be allowed to move outside the interval of the lithology it is associated with.

Deleting a Single Interval

1. Double click on the Bioturbation track / layer to activate the Bioturbations window.

Bioturbations 🛛 🗙
 biotrbc [Bioturbated - churned]
Abundance: Common
🔽 Dbl Click Interval Entry
🔽 Snap To Nearest
Top: 110.28 Base: 110.72
Toolbox Save Exit

2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.

Bioturbations	۲
Abundance	۲
Delete	
Edit Options	F
E×it	

- 3. Click on Delete and the Degree of Bioturbation interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Degree of Bioturbation intervals from the Bioturbation track / layer.
- 5. Press the **Esc** key on the keyboard to exit from the **Bioturbations Builder** window.

Deleting Multiple Intervals

1. **Double click** on the **Bioturbation** track / layer to activate the **Bioturbations Builder** window.

Bioturbations	×
biotrbc [Bioturbated - churned]	•
Abundance: Common	•
Dbl Click Interval Entry	
🔽 Snap To Nearest	
Top: 110.28 Base: 110.72	
Toolbox Save Exit	

- 2. Press and Hold the SHIFT Key and then click and drag an area anywhere within the intervals you wish to delete.
- 3. Release the mouse button to activate a Confirm Multiple Delete message.

Confirm Multiple Delete Confirm Multiple Delete Delete these Symbols? Yes No	at	e a Confirm Multiple De	elete n
		Confirm Multiple Delete 🔣	
Ves No		Delete these Symbols?	
		Yes No	

4. Click on yes button and the Bioturbation interval encompassed with your drag will be deleted accordingly.

5. Press the Esc key on the keyboard to exit from the Bioturbation Builder window.

<u>Note</u>: Every type of layer in **Power*Log**, **Power*Core and Power*Curve** has a **Data Type** classification. The default settings for the **Bioturbation** layer are shown below. To access this window, click on the **Layer Configuration button** on the **Toolbar**, when the **Bioturbation** layer is active.

Active Layer Configuration [Bioturbation]	
Layer - Display Settings Curve Definitions Layer Sca Save Undo Name: Bioturbation	Ales Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Bioturbation NBR UW1 Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Trace Fossils Layer

This layer allows you to add or delete trace fossils in the Power*Core application. There are two types of trace fossils layers. There is a **Bed Restricted (BR)** and a **Non-Bed Restricted (NBR)** layer types.

The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding grain size) where you have to have a rock type in order to enter a trace fossil. The trace fossils are also restricted to the bed you are drawing in. Also, when the bed is resized or deleted the trace fossils may be also resized or deleted if the trace fossils interval coincides with the beds resized or deleted interval.

The **non-bed restricted (NBR)** layer type is not associated with any rock type or bed and can be entered anywhere the user wishes and will not be affected by the resizing or deleting of a bed.

Adding a Trace Fossil

<u>Note</u>: All bed restricted description categories, such as **Trace Fossils (BR)**, are associated with a **Rock Type** and must have a **Rock Type** in order to be saved to the database. Therefore, you cannot add a trace fossil, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

1. Double click on the Trace Fossils track / layer to activate the Trace Fossils Selection window. The

toolbox can be turned on or off by clicking on the buttor	n in the build
	Toolbox 🔀
	Favorite List
	An 🔥
	Ar As
	At
	Au
	Be
Trace Fossil Selection	Сь
	Cf 📃
Ar Ar [Arenicolites]	Cg Ch
Abundance	ci
Occasional 🗸	Cp Cs
	D
Top: 110.24 Base: 110.76 V Dbl Click Interval Entry	Ea
🔽 Snap To Nearest	En Esc 💙
Edit Favorites Toolbox Save Exit	

2. Right click anywhere on the Trace Fossils track / layer to activate the pop-up menu.

Þ	Ar	Arenicolites
₽	As	Asterosoma
	С	Cruziana
	Ģ	Gyrolithes
-	N	Nereites
	0	Ophiomorpha
	Р	Planolites
	s	Skolithos
	Te	Teichichnus
	Z	Zoophycos
	<u> </u>	As C G N O P S Te

- 3. Click on Trace Fossils selection to activate the pop out menu and then select from the pop out favorites list or click in the builder drop down menu selections to access the list provided in them. Either way once you have selected one it will be populated in the builder.
- 4. Click on the Abundance selection to activate the pop out menu and then select from the pop out list or click in the builders drop down menu selections to access the list provided in them. Either way once you have selected one, it will be populated in the builder.



5. Click and drag the mouse on the track / layer over the desired interval. Or If you just click your mouse on the track / layer. This will insert a subinterval of whatever was selected in step 3 and will be added to the layer / track at the depth you clicked at. The interval size is defaulted to the screen scale accuracy setting. The sedimentary structure interval will be drawn accordingly.

- 6. Double Click within an existing rock type interval in the Trace Fossil layer with the I Dbl Click Interval Entry activated and the entire interval will be filled in with the attributes that have been entered into the Trace Fossil window.
- 7. Click and drag the mouse on the track / layer close to an existing trace fossil (either above or below in the same column) with the Snap To Nearest activated and there will be no spaces between the sedimentary

structures. Remember you have to be within 10 times of the mouse pointer or screen accuracy from the previous symbol to have the snap to take effect.

Note: Regardless of the thickness of the interval that you have added to the log, at least one symbol will be drawn in the middle of the interval.

Tip: The frequency of symbols (if not utilizing the arrows subintervals) at any given scale is handled in the Systems Options window, under the Options menu selection. If you have selected 1 symbol every 2m at the 1:240 scale, you will get 1 symbol every 1m at the 1:120 scale, 1 symbol every 4m at the 1:480 scale, and so on.

Repeat Steps 3 - 5 to add more trace fossils to the track.

Note: There are two ways how abundance can be shown. If in the System Options window you have checked

Arrowed Subintervals option, each interval will be displayed with a different line style which specifies the abundance you have selected. E.g. if occasional, an interval arrow will be displayed as a dashed line, while if abundant, an interval arrow will be displayed as a thick solid line. Otherwise, all symbols within an interval will be displayed in the certain color which specifies the abundance you have selected. E.g. if occasional, symbols will be blue, on the other hand if abundant, symbols will be red.

9. Press the Esc key on the keyboard to exit from the Trace Fossil selection window.

Resizing an Interval

7. Double click on the Trace Fossil track / layer to activate the Trace Fossil Builder window. **Mouse Pointer Method**

- 8. Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends. If done correctly the mouse pointer will turn into a resize cursor ${f I}$.
- Click and drag the mouse to the new desired top or bottom depth. Release the mouse button and the 9. interval will be resized.

Keypad Method

1. **Click once** on the Trace Fossil you want to resize to bring it into the builder and change the from or to depth

Save button. Remember if it is a bed restricted layer that the and / or abundance and click on the top or bottom of the Lithology interval will take precedent

Moving an Interval

- 1. Double click on the Trace Fossils track / layer to activate the Trace Fossils selection window.
- Move the mouse pointer over the interval to be moved. Click and drag the interval to a new position. 2. (The bed-restricted interval will not be allowed to move outside the interval of the lithology it is associated with.)

Deleting a Single Interval

1. Double click on the Trace Fossils track / layer to activate the Trace Fossils Selection window.

Trace Fossil Selection	
Ar Ar [Arenicolites] Abundance	•
Occasional	•
Top: 110.24 Base: 110.76	 Dbl Click Interval Entry Snap To Nearest
Edit Favorites Toolbox	Save Exit

2. **Right click** anywhere <u>within</u> the interval you wish to delete to activate the pop-up menu.



- 3. Click on Delete and the Trace Fossil interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Trace Fossil intervals from the Trace Fossils track / layer.
- 5. Press the Esc key on the keyboard to exit from the Trace Fossils Builder window

Deleting Multiple Intervals

1. Double click on the Trace Fossils track / layer to activate the Trace Fossils Builder window.

Trace Fossil Selection	
Ar Ar [Arenicolites] Abundance	•
Occasional	•
Top: 110.24 Base: 110.76	Dbl Click Interval Entry
Edit Favorites Toolbox	Save Exit

- 2. Press and Hold the SHIFT Key and then click and drag an area anywhere within the intervals you wish to delete.
- 3. Release the mouse button to activate a Confirm Multiple Delete message.

Delete these Symbols?	\times
Yes No	1

- 4. Click on yes button and the Trace Fossils interval encompassed with your drag will be deleted accordingly.
- 5. Press the **Esc** key on the keyboard to exit from the **Trace Fossils Builder** window.

<u>Note</u>: Every type of layer in **Power*Log**, **Power*Core and Power*Curve** has a **Data Type** classification. The default settings for the **Trace Fossils** layer are shown below. To access this window, **click** on the **Layer Configuration button** on the **Toolbar**, when the **Trace Fossils** layer is active.

Active Layer Configuration [Trace Fossils	1 🛛
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Trace Fossil: ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) Display Vertical Orientation (Layer Name) Display Backup scales Display Backup scales Display Scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid	Data Type: Trace Fossils NBR
	OK Cancel Help

Rock Accessories Layer

This layer allows you to add or delete rock accessories in the Power*Core application. There are two types of rock accessories layers. There is a **Bed Restricted (BR)** and a **Non-Bed Restricted (NBR)** layer types.

The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding, grain size) where you have to have a rock type in order to enter a rock accessory. The rock accessories are also restricted to the bed you are drawing in. Also, when the bed is resized or deleted the rock accessories may be also resized or deleted if the rock accessories interval coincides with the beds resized or deleted interval.

The **non-bed restricted (NBR)** layer type is not associated with any rock type or bed and can be entered anywhere the user wishes and will not be affected by the resizing or deleting of a bed.

Adding a Rock Accessory

<u>Note</u>: All bed restricted description categories, such as **Rock Accessories (BR)**, are associated with a **Rock Type** and must have a **Rock Type** in order to be saved to the database. Therefore, you cannot add a sedimentary structure, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

1. Double click on the Rock Accessory track / layer to activate the Rock Accessory Symbol window. The

toolbox ca	an be turnec	I on or off by clicking on the Toolbox button in the by	uilder.
			Toolbox 🔀
			Favorite List
	Rock Access	ory Builder	<u>`</u>
	Thinbed:	<u> </u>	E
	Component:	<u> </u>	
	Matrix:	<u> </u>	
	Cement:	<u> </u>	
	Abundance:	▼	e
	Top:	Base: Dbl Click Interval Entry Fried Snap To Nearest	
	Edit Favorites	Toolbox Save Exit	

- 2. **Right click** anywhere on the **Rock accessories** track / layer to activate the pop-up menu shown on the next page.
- 3. Click on Rock accessories selection to activate the pop out favorites list menu and then select from the list or click in the builder drop down menu selections to access the list provided in them. Either way once you have selected one it will be populated in the builder.



4. Click on the Abundance selection to activate the pop out menu and then select from the pop out list or click in the builders drop down menu selections to access the list provided in them. Either way once you have selected one, it will be populated in the builder.



- 5. Click and drag the mouse on the track / layer over the desired interval. Or If you just click your mouse on the track / layer. This will insert a subinterval of whatever was selected in step 3 and will be added to the layer / track at the depth you clicked at. The interval size is defaulted to the screen scale accuracy setting. The sedimentary structure interval will be drawn accordingly.
- 6. **Double Click** within an existing rock type interval in the Bioturbation layer with the **Double Click Interval Entry** activated and the entire interval will be filled in with the attributes that have been entered into the **Bioturbation** window.
- 7. Click and drag the mouse on the track / layer close to an existing Bioturbation Symbol (either above or

below in the same column) with the Snap To Nearest activated and there will be no spaces between the bioturbations. **Remember** you have to be within 10 times of the mouse pointer or screen accuracy from the previous symbol to have the snap to take effect.

<u>Note</u>: Regardless of the thickness of the interval that you have added to the log, at least one symbol will be drawn in the middle of the interval.

<u>Tip</u>: The **frequency of symbols** (if not utilizing the arrows subintervals) at any given scale is handled in the **Systems Options** window, under the **Options** menu selection. If you have selected 1 symbol every 2m at the **1:240** scale, you will get 1 symbol every 1m at the **1:120** scale, 1 symbol every 4m at the **1:480** scale, and so on.

8. Repeat **Steps 3 - 5** to add more rock accessories to the track.

Note: There are two ways how abundance can be shown. If in the System Options window you have checked

Arrowed Subintervals option, each interval will be displayed with a different line style which specifies the abundance you have selected. E.g. if occasional, an interval arrow will be displayed as a dashed line, while if abundant, an interval arrow will be displayed as a thick solid line. Otherwise, all symbols within an interval will be displayed in the certain color which specifies the abundance you have selected. E.g. if occasional, symbols will be blue, on the other hand if abundant, symbols will be red.

9. Press the **Esc** key on the keyboard to exit from the **Rock Accessory Symbol** window.

Resizing an Interval

- 1. **Double click** on the **Rock Accessory** track / layer to activate the **Rock Accessory** window. **Mouse Pointer Method**
- 2. Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends. If done
 - correctly the mouse pointer will turn into a resize cursor \downarrow .
- 3. Click and drag the mouse to the new desired top or bottom depth. Release the mouse button and the interval will be resized.

Keypad Method

3. **Click once** on the Rock Accessory Symbol you want to resize to bring it into the builder and change the from or to dopth and (or obundance and **click** on the Save button Bemember if it is a had

from or to depth and / or abundance and **click** on the **button**. Remember if it is a bed restricted layer that the top or bottom of the Lithology interval will take precedent.

Moving an Interval

- 1. **Double click** on the **Rock Accessory** track / layer to activate the **Rock Accessory Symbols** window.
- 2. Move the mouse pointer over the interval to be moved. Click and drag the interval to a new position. (The bed-restricted interval will not be allowed to move outside the interval of the lithology it is associated with.)

Deleting a single Interval

1. Double click on the Rock Accessory track / layer to activate the Rock Accessory Symbols window.

Rock Access	sory Builder	×
Thinbed:	anhy prim pebbles [anhydrite (primary) pebbles]	•
Component:		•
Matrix:		•
Cement:		•
Abundance:	Occasional	-
Top:	110.62 Base: 111.22	ntry
Edit Favorites	S Toolbox Save Exit	

2. Right click anywhere <u>within</u> the interval you wish to delete to activate the pop-up menu.

Rock Accessories	•
Abundance	۲
Delete	
Edit Options	۲
Exit	

- 3. Click on Delete and the Rock Accessory interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Rock Accessory intervals from the Rock accessories track / layer.
- 5. Press the Esc key on the keyboard to exit from the Rock Accessory Symbol window.

Deleting Multiple Intervals

1. Double click on the Rock Accessory track / layer to activate the Rock Accessory Builder window.

Rock Acces	sory Builder	\times
Thinbed:	anhy prim pebbles [anhydrite (primary) pebbles]	-
Component:		•
Matrix:		•
Cement:		•
Abundance:	Occasional	•
Top:	110.62 Base: 111.22	ntry
Edit Favorites	S Toolbox Save Exit	

- 2. Press and Hold the SHIFT Key and then click and drag an area anywhere within the intervals you wish to delete.
- 3. Release the mouse button to activate a Confirm Multiple Delete message.

e Delete	\times
ols?	
No	
	ools?

- 4. Click on <u>Yes</u> button and the Rock Accessory interval encompassed with your drag will be deleted accordingly.
- 5. Press the **Esc** key on the keyboard to exit from the **Trace Fossils Builder** window.

Note: Every type of layer in Power*Log, Power*Core and Power*Curve has a Data Type classification. The default settings for the Rock accessories layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the Rock Accessories layer is active.

Active Laver Configuration Rock Accessor	ies 1
Save Undo Name: Rock Accessories	ies Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Rock Accessories NBR UWI Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Percent Layer

Adding a Percent Track / Layer

Percent can be added either as a track or a layer to your log. When you add a Percent as a layer to your log, you must assign it to a specific track. Adding a Percent Track

1. Click on Log Configuration Builder under the Options menu selection or click on the Log Configuration Builder button on the Toolbar to activate the Log Configuration Builder window:



- 2. On the left hand side of the Log configuration window scroll down the list of tracks and click on the Percent
- track. The track will become highlighted and the **Tracks** radio button 💽 Tracks will become activated.
- 3. On the right hand side of the Log configuration window **click** on the **Depth Track**. In this example we will be adding the Percent track to the left of the Depth track or above the Depth track in the horizontal application.

The track will become highlighted and the Tracks radio button <a>C Tracks will become activated.

- 5. Click on the _____Yes button. This will activate a Get Name window allowing the user to name the track.



6. **Type in** a percent name and then **click** on the **button**. The track will be added above the **Depth** Track or to the left on the log, and the Log Configuration Builder window will be shown.

Available Logs			Active Log	
Log. SYSTEM Tracks Interpreted Uthology Uthology (2) Uthology Description Mud Gas Oil Show Oil Staining Percent	•	Log Config Add All>>> Show All Hide All	Active Log Log: TutoriaCoveLog Tracks Y 0.50 Formation Y 0.50 Formation Y 0.50 Environment Y 0.50 Detect Silos Y 1.00 Precent Silos Y 0.50 Optin Y 0.30 Optin Y 0.30 Optin	Track Config
Porcely Grade Porcely Type Rock Accessories Rounding Sedimentary Structures Ridewall Pres	K N	Add >>> Delete Show/Hide	Y 1.40 Grain Size Y 0.30 Oil Staining Y 0.64 Sedmentary Struct Y 0.64 Trace Forsite Y 0.42 Rock Accessories Track Width: 1.00 Log	-
C Layers Percent		End	C Lapers Percent Silca (100141	2396 Comp 901223W502)

7. Click on the **Exit** button. This will activate the Log, and the new track will be added to your log.

Drawing Percents

1. **Double click** on the **Percent track** to activate the Percent Layer window.

	Percent Layer [Percent Clay] Back Color Fore Color Gradient Pattern: Snap to % 1 ✓ Soft Edges Save	Color Basic colors:
	The default is a black histogram. The user has the	e ability to modify this.
2.	Click on the Back Color button and select a button.	color from the palette and then click on the
3.	Click on the Fore Color button and select a obutton.	color from the palette and then click on the
4. 5. 6. 7.	from the resulting choice list. This allows the mour percentage. Soft Edges Soft Edges: When checked will rou sine wave lines instead of strain lines.	becific pattern type. For Environment window and select any of the percents se to move or less precision when dragging in a and off the percent and will present the percent edges with $\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{10000}$ $\frac{1}{10000000000000000000000000000000000$
	Percent Hard edges	Percent Soft edges
	and Percent (%) , as indicated within the mouse p Percent (%) track. Release the mouse button and the percent inter	ging the mouse pointer from a specific Measured Depth pointer display box to another Measured Depth on the val will be drawn accordingly.
11.	Repeat steps 8-9 to define more intervals.	

12. Click on the Exit button to exit the window.

Deleting Percents

1. **Double click** on the **Percent track** to activate the Percent Layer window.

Percent Layer [Percent Clay]			
Back Color			
Fore Color			
	🔲 Gradient		
Pattern:		-	
Snap to %	1		
🔽 Soft Edges			
Save		Exit	

2. Right click on the interval within the Percent track that you want to delete and select Delete from the pop out menu. The interval will be deleted. To delete all the intervals select Delete All Data instead.

			Percent Silica
			Delete Delete All Data
			Edit Options
			Exit
 . I	Exit		

3. Click on the **Exit** button and the Percent Layer window will be closed.

Changing the Percent Scale

Percent scale can be changed through the Layer Configuration window.

- 1. Click on the Layer Configuration button on the Toolbar, when the Percent layer is active. This will activate the Layer Configuration window.
- 2. Click on the Layer Scales Tab to show the window shown below.

Active Layer Configuration [Percent Clay]	
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Di	isplay Dip Meter Definitions
Save Undo	
Porosity Grade Scale Percent Layer Scale Dip Meter Scale	
Grain Size Scale Carbonate Texture Scale Left: 40 Right: 0	Depth-Axis Grid
Verbal Settings	Style:
Grain Size Scales	Data-Axis Grid
Carbonte Texture Scales	Type: Linear 💌
to	Units: 🕅
Dip Meter Quality Scale Range	Linear Cycles
From: To:	Major Minor Increment
	2 4 8
	Log. Cycles:
ОК	Cancel Help

- 3. Notice that the default scale (when the percent was originally added to the log) was 0 to 100% as you would see in your window. To change the original scale from 0 100% to 0 20%, simply adjust the Left Scale value to 40 by double clicking in the Left Scale field and typing in a value of 420.
- 4. The user can also change the layer grid pattern by changing the Linear Cycles portion of the window.
- 5. Click on the System Message window to exit the Layer Configuration window.

Multi Array Data Layer

The Multi Array Data Track can be added either as a track or a layer to your log. When you add a Multi Array as a layer to your log, you must assign it to a specific track.

How to Add a Multi Array Track

 Click on Log Configuration Builder under the Options menu selection or click on the Log Configuration Builder button on the Toolbar to activate the Log Configuration Builder window:



- 2. On the left hand side of the Log configuration window scroll down the list of tracks and click on the Multi Array Data Layer track. The track will become highlighted and the Tracks radio button Tracks will become activated.
- 3. On the right hand side of the Log configuration window **click** on the Track you want it to go above or to the right of. In this example we will be adding the Multi Array track to the left of the Depth track or above the Depth track in the horizontal application. The track will become highlighted and the **Tracks** radio button

Tracks will become activated.

- 5. Click on the <u>Yes</u> button. This will activate a Get Name window allowing the user to name the track.



6. **Type in** a Track name (Multi Array Density Data Layer) and then **click** on the **DK button**. The track will be added above the **Depth** Track or to the left on the log, and the Log Configuration Builder window will be shown.

og Configuration Builder			
Available Logs		Active Log	
Log SYSTEM V	Log Config.	Log: bit grade	•
Hole Dip Meter Data Interpreted Lithology	Add All>>>	Tracks Tracks Y 0.60 Ages Y 0.60 Formation Tops	ck Config.
Lithology (%) Lithology Description MDT	Show All	N 0.15 Slide - Rotate Y 0.20 Date	=
Mud Gas Multi Array Data	Hide All	Y 0.50 MDT N 2.00 Drilling Progress Y 2.00 Multi Array Density Data	_
Oil Show Oil Staining Percent	Add>>>	Y 0.50 Depth Y 0.80 Lithology (%) Y 0.20 Test	
Porosity Grade Porosity Type Bock Accessories	Delete	Y 0.20 Core Y 0.15 Oil Show	~
	Show/Hide	Track Width: 2 Log Width:	24.9
	Move	C Layers Laj	/er Config.
C Layers Multi Array Data Layer		Multi Array Density Data Layer	(bit gra
	Exit		

7. Click on the Exit

button. This will activate the Log, and the new track will be added to your log.

Setting up the Layer using the Dialogue Window

1. **Double click** on the Multi Array Data Layer to activate the Multi Array Data Dialogue window.

Multi Array Data Dialog		×
Left / Bottom Right / T Scale: 0.00 1 Group ID: 1 Select Curves	op Curve Units: Units	
Curve ID	Order	^
📲 tnph_san	** not set**	
📲 tnph_lim	** not set**	
📲 tnph_dol	** not set**	
NC5	** not set**	
😹 NC4	** not set**	
IS	** not set**	~
🔲 Log Scale 🛛 Cycles: 🛛		
Delete Group	Cancel OK	

2. Click on the curves you want in this layer in the Select Curves portion of the window. (You can have as many as you like). As you highlight the curve names they indicate which channel or ordering they will be displayed on the layer.

N.B. The curve list is provided from the curves that have been added through the log builder or have been imported through the ASCII or LAS Import utilities.		
P		
 6. If the curves are logarithmic then the user must indicate how many log cycles you wish to display. 7. Click on the button. 		
,		

p2c0

p1c0

Delete Group

✓ Log Scale Cycles: 4

Linear Curve Data

** not set **

** not set **

Cancel

ΟK

р3с0

D2c0

Log Scale

Delete Group

Cycles:

Logarithmic Curve Data

Cancel

ΟK

2



Below is an example of the Multi Array data layer illustrating Linear Data.

Note: Every type of layer in Power*Log, Power*Core and Power*Curve has a Data Type classification. The default settings for the Multi Array Data layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the Rock Accessories layer is active.

Active Layer Configuration [Multi Array Density Data Layer]		
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions	
Save Undo	Data Type: Multi Array Data	
Name: Multi Array Density Data Layer	Uwl	
 Show Layer on Track Display Vertical Orientation (Layer Name) Display Backup scales Display scales on non-active layers Display Full Logarithmic Scale 	Depth Offset:	
	Display Scale Placements Every Start at:	
Display Depth-Axis Grid Display Data-Axis Grid		
	OK Cancel Help	