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A printed version of the Power*Log / Curve on-line expansion dictionary

Appendix B – Power*Log / Curve / Core Reports

An example of various Power*Log / Curve / Core Reports and Types and saved in the PS and TV Report directories

Appendix C – Power*Log / Curve / Core System Logs

A hard copy version of the Power*Log / Curve / Core System Logs

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Introduction

Power*Log / Core & Curve™ (Petrographical Office and Wellsite Evaluation and Reporting) is a chip sample and core logging program that utilizes single-entry data capturing to produce geological striplogs and corelogs. The geological data is entered into the system through the use of intuitive data entry forms to ensure standardization of data. This data is stored in an RDBMS (Relational Database Management System) to allow data manipulation using SQL (Structured Query Language) access tools.

Power*Log / Core & Curve[™] Software consists of Four (4) Main Sections:

- 1. A log editor module that allows you to change the striplogs to suit your needs and preferences.
- A data transfer module. 2.
- 3. Report printing modules.
- 4. An on-line help system that is designed to familiarize you with the commands and functions available in Power*Log / Core & Curve™ and lead you through many of the processes involved in creating logs.

Starting Power*Log / Core & Curve™...

<u> 7</u> 1. Double click on the Power*Log / Core & Curve™ icon. This brings you into the Power*Log / Core & Curve™ program. The first window to appear will be the Security window with the registration and

ΟK copyright information. Click on the **button** to acknowledge the window. A Connect Database window will immediately appear. See the "Connect" section, later in this User Manual to learn more about how to connect to a database.

- 1. Highlight the PGEOLOGY V12 IMPERIAL (Microsoft Access Driver [*.mdb]) database by clicking on it once, if it is not already highlighted.
- 2. Move your mouse pointer to the User ID data field and click once to activate a flashing cursor in the User ID field. Then, type pgeology in the User ID field. Press the Tab key on the keyboard.
- Connect Type **pgeology** in the **Password** field and then **click** on the **button**. The program will now 3. load various dictionaries and will activate an Open Log window.
- button to start a new log/well. 4. Double click on a log to open an existing log or click on the New Log You are now in the Power*Log / Core & Curve™ environment.

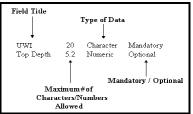
Navigating through Power*Log / Core & Curve™:

When you are entering information into data forms, you may move between boxes/fields by pressing the Tab key to go forward and Shift +Tab to move backwards. To exit forms that do not have an Exit, OK, or Cancel button, press the **Esc** key on the keyboard.

The various fields located in the Power*Log / Core & Curve™ dialog boxes have character restrictions. "Field Restriction Tables" are provided in this manual that provide a useful reference to help you enter the appropriate amount of characters or numbers in each field.

Reading the Field Restriction Tables:

The tables have four columns each and resemble the example table shown below:



For numeric fields, the maximum amount of numbers allowed is represented on the table as a decimal. The number that precedes the decimal indicates how many numbers you may place before a decimal point and the number following the decimal represents how many numbers may follow the decimal point.

For example: If the number on the Field Restriction Table is 5.2. You may place five (5) digits before the decimal point and two(2) digits after the decimal point. The range of numbers available, in this particular case, is -99999.99 to



99999.99. If you enter too many numbers in a field, your current record will not be saved. Instead, the offending field is highlighted and an error message appears in the lower left side of the **Status Bar**.

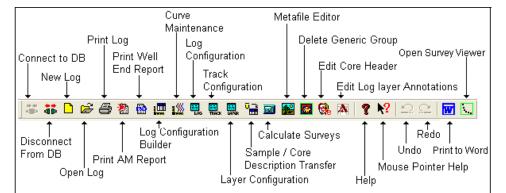
Any key on the keyboard is considered a character, so you may place letters, numbers, and symbols in any **CHARACTER** field. You may enter as many characters as that field allows (this is represented as a whole number on the **Field Restriction Table**). If the field is categorized as DATE FORMAT, then you must use the proper date and time format that you have selected in your **System Options**.

If a field is MANDATORY, it must be filled in before you can save a record. **Power*Log / Core & Curve™** uses these mandatory fields to identify records in the database. Therefore, if you have not filled in a mandatory field and you try to save the record, the offending field is highlighted and an error message appears in the lower left side of the **Status Bar**.

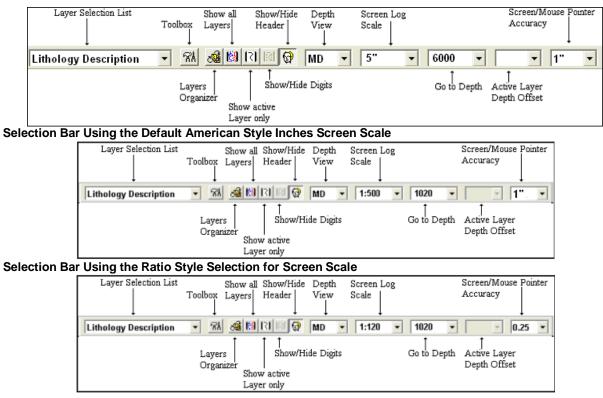
Accessing the On-line Help System in Power*Log / Core & Curve™:

You can make use of the context sensitive help by pressing the **F1** key when you are in a dialog box. A pertinent help file will appear, opened to the topic relevant to the dialog box you are in.

The Toolbar



The Selection Bar..



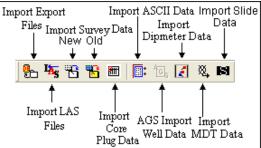
The Status Bar...

For Help, press F1 paeology UPDATE KB: 567.6

The **Status Bar** displays system status messages and any error message (associated with a field entry), in the far left corner. The KB elevation is displayed in the lower right corner of the **Status Bar**.

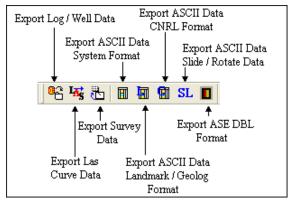
The Import Toolbar

This toolbar is dock able and can be moved to different places on the screen. **The Power*Log / Core & Curve™ Import Toolbar...**



The Export Toolbar

This toolbar is dock able and can be moved to different places on the screen. The Power*Log / Core & Curve™ Export Toolbar...



Button, Check box and drop box types.

Radio Buttons	
Activated	O De-Activated
<u>Check Boxes</u>	Drop Box
✓ Activated □ De-Activated	Click Arrow ± d

The Four (4) Main On-line Help System Categories:

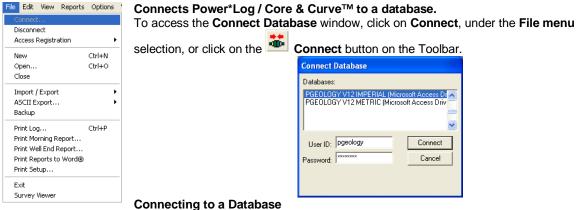
Commands - Descriptions of each menu command within Power*Log / Core & Curve™.

Toolbar - Shortcuts to common commands are explained.

Database Table Operations - Commands or functions related to the Database Table are described.

Quick Reference Guide - The portion of the On-line Help System that quickly refers you to some of the more commonly performed tasks.

Chapter One - File Menu Connect



- When this window is displayed, highlight the PGEOLOGY V12 IMPERIAL (Microsoft Access Driver)*.mdb)] database.
 - 2. Enter your **User ID** and **Password** in their respective fields (your default User ID and Passwords are both "**pgeology**").
 - 3. **Click** on the **Connect button** to complete the connection.

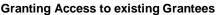
Disconnect

Disconnects Power*Log / Core & Curve ™ from a database.

Disconnect button on the **Toolbar**

Grant Access

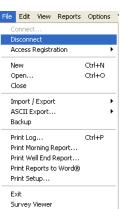
The **Grant Access** window provides the **Network Administrator** and/or **Power*Geology Superuser**(displayed in the **Granter** field in the upper left corner of the **Grant Access** window), with the ability to control which network users gain access to specific well information or data residing within the **Power*Geology** network database.



1. Click on Access Registration, under the File menu selection, and then click on Grant Access.

File			
Connect			
Disconnect		_	
Access Registration		Þ	Grant Access
New	Ctrl+N		Revoke Access
Open	Ctrl+O		
Close	Cuito		
Close			
Import / Export		۲	
ASCII Export		۲	
Backup			
Print Log	Ctrl+P		
Print Morning Report			
Print Well End Report			
Print Reports to Word®			
Print Setup			
Exit			
Survey Viewer			

This will activate the Grant Access window shown on the next page:



Grant Access	\mathbf{X}
Granter: PGEDLOGY Granter's Well List Prev 100 Next 100 All None ACEL Steelman [191072700505%/200] Anybody et al Basing Side Track [100141901223w/508] Core Log [Core Log DS] horizontalTest [100153205323w/500] herwisell [158032300508w/402] Suncor Shell Panther River 1-18 [100011803010w/500] SYSTEM METRIC [SYSTEM (M)] testTutorialCoreLog [100141901223w/506] Tutorial Core Log [100141901223w/500] State S	Grantees All None JOE PUBLIC
New Well (UWI)	New Grantee
	Grant Access Close

- 2. Select (highlight) the well(s) from the **Granter's Well List** field that you wish to give a specific **Grantee** or **Grantees** access to.
- 3. Select (highlight) the **Grantee(s)** from the **Grantees** list field that will be given access to the well you selected earlier from the **Granter's Well List** field.
- 4. Click once on the Grant Access button and you will receive the following system message, "Do you really want to GRANT access?"
- 5. Click once on the <u>Yes</u> button to give the selected Grantee(s) access to the selected well(s).

Note: Use PUBLIC, in the Grantees list field, to give ALL of the Grantees access to selected well(s).

Granting Access to a new Grantee

- 1. Click on Access Registration, under the File menu selection, and then click on Grant Access to activate the Grant Access window.
- 2. Select (highlight) the well(s) from the Granter's Well List field that you wish to give the new Grantee access to.
- 3. Type the name of the new Grantee into the New Grantee field.
- 4. Click once on the **Grant Access** button and you will receive the following system message, "Do you really want to GRANT access?"
- 5. Click once on the <u>Yes</u> button to give the new Grantee access to the selected well(s).

Granting Access to a new well

<u>Note</u>: Situations will arise in which existing **Power*Log/Curve** users have not yet been given access to a well that was recently or soon to be spudded. Accordingly, the **Network Administrator** and/or **Power*Geology Superuser** will use the **UWI** from the new well to grant access to the selected **Grantee(s)**.

- 1. Click on Access Registration, under the File menu selection, and then click on Grant Access to activate the Grant Access window.
- 2. Type the UWI of the new well into the New Well (UWI) field.
- 3. Select (highlight) the Grantee(s) from the Grantees list field that will be given access to the new well.
- 4. Click once on the Grant Access button and you will receive the following system message, "Do you really want to GRANT access?"
- 5. Click once on the <u>Yes</u> button to give the selected Grantee(s) access to the new well.

Revoke Access

The **Revoke Access** window provides the **Network Administrator** and/or **Power*Geology Superuser** (displayed in the **Granter** field in the upper left corner of the **Revoke Access** window), with the ability to revoke the access of specific network users to specific well information or data residing within the **Power*Geology** network database.

Revoking Access to existing Grantees...

1. Select Access Registration, under the File menu selection, and then click on Revoke Access to activate the Revoke Access window shown below:

			Rev	roke Access			\mathbf{X}
File Connect Disconnect Access Registration		Grant Access Revoke Access	G	anter: PGEOLOGY levoke Access (Granter rantees DAMON PUBLIC SEPHTON	Grantee's Well List BG Canada Hz N Bubble bob [bob] Chattak 2B [Chattak 2B CLEAR BDY LK S 4-13- CLEAR BDY LK S 4-13-	-84-11 [100041308411\/600] 84-11\/6 [100111208411\/60 4-11 [100141308411\/600] 100040608410\/600]	300]
	Ctrl+N ^[] Ctrl+O				,	Revoke Access (Grantee Vie	ew)
Import / Export ASCII Export Backup	*			ievoke Access (Well Vi Well Name Clear B	ew) DYLKS 14-13-84-11	Grantees All No	one
Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Ctrl+P		-	UWI: 10014	1308411\v/600	Revoke Access (Well View	v)
Exit Survey Viewer						Close	,

- 2. Select (highlight) a specific **Grantee** from the **Grantees** list field to determine what wells in the **Grantee's Well** List field the **Grantee** currently has access to.
- 3. Select (highlight) the well(s) from the **Grantee's Well List** field you wish to revoke access to for the previously selected (highlighted) **Grantee**.
- 4. Click on the Revoke Access (Grantee View) button and you will receive the following system message, "Do you really want to REVOKE the selected wells from the selected user?"
- 5. Click on "Yes" to revoke the access of the selected Grantee to the selected well(s) in the Grantee's Well List field.

Revoking Access to a selected well

- 1. Select Access Registration, under File, and then click on Revoke Access to activate the Revoke Access window.
- 2. Click on the Well Name button to activate the Well List window.
- 3. Double click on the desired Well from the Well List window to display it in the Well Name and UWI fields within the Revoke Access window.
- 4. Select (highlight) the **Grantee(s)** from the **Grantees** field for whom you wish to revoke access to the selected well.
- 5. Click on the Revoke Access (Well View) button and you will receive the following system message, "Do you really want to REVOKE the selected users from the selected well?"
- 6. Click on the "Yes" button to revoke the access of the selected Grantee(s) to the selected well displayed in the Well Name and UWI fields, respectively.

New Log

1. The first step in creating a new log is to click on the **New Log button** on the **Toolbar**, or to select **New** from the **File** menu selection. This will open the **New Log** window shown below:

le Edit View Re	ports Option	s
Connect Disconnect Access Registration	л	•
New Open Close	Ctrl+N Ctrl+O	
Import / Export ASCII Export		• •
Print Log	Ctrl+P	
Print Morning Repo Print Well End Repo Print Reports to Wo Print Setup	ort	
Exit Survey Viewer		

- 2. The Cursor will be active in the Well / Log Name field. **Type** in the **Well Name** into the Well / Log Name field (maximum of **50** characters). On a new well the well name and the log name will be the same.
- 3. Click on the UWI / API: button to activate the UWI Format window shown below:

. –

UWI / API Format
Use: API / I UWI / API:
NTS (National Topographic Series System) Survey System Loc. Ex. 1/4 Unit Block. P. Ouad L Ouad. Sixteenth Event Sequence 2 0 0 0 0 0 0 0
API Code / Name 35-139-23155
OK Cancel

- 4. The default or flashing caret is in the API Code / Name field. **Type** in your API code or at least something to make this well unique.
- 5. Click on the **DK** button when you have finished entering the **API Code**. You will notice that the API / UWI field will be filled in the New Log window.

6.	Click on the	button to activate the Log Format List windo	w shown b	pelow:
		Log Format List		
		V SYSTEM Geology Log (SYSTEM (I)) V SYSTEM SVSTEM (II) V SYSTEM SVGEOrelational (SYSTEM (II)) V SYSTEM SVGEOrelational (SYSTEM (II)) V SYSTEM Composite Log (SYSTEM (II)) V SYSTEM Composite Log (SYSTEM (II)) V SYSTEM Composite Log (SYSTEM (II)) V SYSTEM Core Carbonate Log (SYSTEM (II)) V SYSTEM Core Log (BR) gird of (SYSTEM (II)) V SYSTEM Core Log (BR) gird of (SYSTEM (II)) V SYSTEM Core Log (BR) gird of (SYSTEM (II)) V SYSTEM Geo / Mudlog All Gas (SYSTEM (II)) V SYSTEM Horizontal Log (SYSTEM (II)) V SYSTEM Horizontal Log (SYSTEM (II)) V SYSTEM HORZ (Log (SYSTEM (II)) V SYSTEM HORZ (Log (SYSTEM (II)) H SYSTEM HORZ (Log (SYSTEM (II)) <td>Query Select Clear Field Cancel</td> <td></td>	Query Select Clear Field Cancel	
7.		you wish to use for your log and then click on the red format, where upon you will be returned to the		button. You may also
No	te: Log Formats with the l	atter "V" in front of their names are Vertical logs a	and can on	ly be used within

<u>Note</u>: Log Formats with the letter "V" in front of their names are Vertical logs, and can only be used within **Power*Log™**. Log Formats with the letter "H" in front of their names are Horizontal logs, and can only be used within **Power*Curve™**.

- 8. **Double Click** in the **Log Start Depth** field. This will highlight the Zero, and activate a flashing cursor. Type the depth at which you want your log to start.
- 9. Once the information is entered, **click** on the **Create button**.

<u>Note</u>: This will initiate a **New Log**. During this process, the curves associated with the selected log format will be added and **Add Curve** windows may be activated for each curve within that log format. An example of an **Add Curve** window is shown below.

Add Curve	×
UWL/API: 35-139-23155	
Curve Heading	
Name: Drill Rate	Curve Units: min/ft
Depth Units: 🥂 💌	Null Value: -1.00000
Curve Scale	
Use 0 to 0 for the whole Depth Interval: 0.00 to 0.00	og) (Left / Bottom) (Right / Top) Scale: 0.00000 to 15.00000
Backup Scale: straight shift 💌	Grid Type: Linear 💌
	OK Cancel

10. Click on the **DK** button for each Add Curve window and you will have just added curves to the database that are displayed on the layers with the same name.

<u>Note</u>: You may edit any of the curve's properties in the Add Curve window. For more information, see "Adding Curves" in Chapter Ten.

- 11. You can now edit, or add information in the Well Header Information window.
- 12. Select Well, under the Edit menu selection, to activate the Well window, shown below

Well							
Save Undo New Del First Prev ? Nex							
API 35-139-23155	Surf. Location: 35-139-23155						
Well Name Tutorial Well	Btm. Location: 34-138-23155						
Operator: ABC Oil & Gas	Licensee: ABC Oil & Gas Permit # 32423						
Drilling Contractor: Drill em Up	Pool: Large Field: Barnett						
County: Silverado	Rig #: 27						
Province/State: Texas	Elevations Reference: Ground Ground / Collier 219						
Country: USA	Reference: Ground Ground / Collar: 219 KB: 234 Casing Flange: 218						
Surface Coordinates	KB: 1204 Casing Flange: 1210						
Latitude 30.1612	N/S: 400 ft North of the South boundary						
Longitude 97.4433	E.W: 550 ft East of the West boundary						
Intermediate Casing Point Coordinates							
Latitude 30.1615	N/S: 1345 ft North of the South boundary						
Longitude 974434	E/W: 520 ft East of the West boundary						
	Jozo it Last of the west boundary						
Bottom hole Coordinates	- N/2 -						
Latitude 30.1635	N/S: 9600 ft North of the South boundary						
Longitude 97.4437	E/W: 1027 ft East of the West boundary						
UTM Surface Coordinates	Easting: 621161						
Northing: 3349894	Easting: Joz 1101						
Hole Direction: Horizontal - Eaulted	Deviated Hole ID: Ist of Many						
	Date Time Work Schedule						
Drillers T.D. Drillers T.D. Drillers T.D. Drillers T.D. Loggers T.D.							
(Tally) MD (Tally) TVD (Strap) MD (Strap) TVD MD	TVD T.D.: Sep 12, 2012 09:40 Mud Types						
10500 7962.11 10498 7962.1							
KB to Ground Cut Fill Plugback	Sidetrack Rig Release: Sep 17, 2012 08:00 Dir. Surveys						
17 2 8027	8035 Well Status: Potential Oil Well Det. Lith.						
Water Depth Reference: Water Depth:	Abstract						

13. Fill in the information you feel is necessary (the picture above is filled in to give you an idea of what is required),

and then **click** on the

button to save any changes you have made to the database.

<u>Note</u>: Some of the fields in the **Edit Well** window have character restrictions or mandatory requirements. Consequently, if any of these restrictions have been violated or if any requirements have not been met, the offending field will be highlighted, the nature of the problem will be displayed on the **Status Bar** (lower left hand corner of the screen), and you will be prompted with a system error message window.

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



Starting a New Log with an Existing Well

An example of doing this would be to create a Horizontal Log presentation for an existing vertical well in the database. You would use the vertical presentation (either MD, SSL. or TVD) and when the well reached 90 degrees you would start up a Horizontal. Also you could have a wellsight sample log and then incorporate the Samples with the Wireline data to have a composite log presentation.

1. The first step in creating a new log is to click on the **New Log button** on the **Toolbar** or to select **New**, under the **File** menu selection, and the **New Log** window will be opened.

Connect		New Log	
Disconnect Access Registration	•	UWI / API:	
New	Ctrl+N	Well List	
Open	Ctrl+0	Well / Log Name:	
Close			
Import / Export	•	Log Format	
ASCII Export	+	Log Type:	
Backup		Log	
Print Log	Ctrl+P	Comments:	
Print Morning Report			
Print Well End Report			
Print Reports to Word®		Log Start	Storage
Print Setup		Log Start Depth: 0	Units: Metric
Exit			Create Cance
Survey Viewer			

- 2. Click on the **Well List...** button to view the wells in the database. Then, double click on the well of your choice to automatically fill in the UWI / API and Well/Log Name fields. The user can then modify the Well/Log Name field to suitably reflect the Log Format (Vertical or Horizontal), to be used to display the existing well's data.
- Type a name for your log in the Well/Log Name field (no more than 50 characters long). The original Log name will be viewed in the Log/Name field. The Log name must be unique in the database. The user must modify the name by adding / removing or creating a new name.

Note: This does not change the well name; it only changes the log name.

- 4. Click on the Log Format... button to activate the Log Format List window.
- 5. Click on the Log Format you wish to use for your log and then click on the <u>Select</u> button. Alternatively, you can simply double click on the desired Log Format and you will be returned to the New Log window with your selection appropriately displayed.

<u>Note</u>: Available Logs with the letter "V" in front of their names are <u>Vertical</u> logs and can only be used within **Power*Log/Core™**. Likewise, **Available Logs** with the letter "H" in front of their names are <u>Horizontal</u> logs and can only be used within **Power*Curve**[™].

- 6. **Double Click** in the **Log Start Depth** field to highlight the numeral zero (**0**) and activate a flashing cursor. Then, type in the depth at which you want your log to start.
- 7. Once the information is entered, **click** on the **Create button**. If you have associated an existing well with the log, you will be prompted with yet another system message, **"You are about to create a new log for an**

existing well. Do you want to proceed?" Click on the <u>Yes</u> button to confirm.

<u>Note</u>: This will initiate a **New Log**. During this process, the curves associated with the selected log format will may be added in the form of **Add Curve** windows, for each curve within that log format, with their associated units and scales.

8. **Click** on the **DK button** for each **Add Curve** window and you will have just added curves to the database that are displayed on the layers with the same name in/on your log.

How to Change the API code or the Unique Well Identifier (UWI)

This procedure will guide the user through the appropriate steps to change the API code or the UWI.

1. Click on the Open Log button or select Open, under the File menu selection, to activate the Open Log window.

Tutorial Well ABC Oil Anywhere 12-25 Gamma R Tutorial Core Log			~ ~	 Fearch Wells by Field or DLS/NTS Field Note: Wildcards : % = any range, _ = single charac Enter Search String
/ell Name	UWI	Spud Date	Total [🔨	
ABC COMPANY	H20			
ABC Oil Anywhere 12-25	ABC 0il 12-25	Feb 25, 2001	1037	Choose field to search
ABC Oil Anywhere 12-25	ABC Oil 12-25	Feb 25, 2001	1037	Uwi 👻
ACL LPINECK 2-5-31-28	10002050312	Nov 30, 2005	1276	
Anybody Oil and Gas	10012020451	Jun 26, 2004	3995	DLS (Dominion Land Survey System)
Anyone Enchant	10004100141	Sep 12, 1996	678	Survey
Aramco Carbonate Template	Aramco			Suvey System Loc. Ex. LSD Sec. Township Range E/W Mer. 0/A E.S.
ASE051058LOG	ASE051058			
BG CANADA CARIBOU 5-6-J 9		Jan 5, 2006		
BG Canada Hz N Bubbles a-26-G		Sep 1, 2006		NTS (National Topographic Series System)
bob	bob			
Chattak 2B	Chattak 2B	Sep 10, 2005	718.6	Survey System Loc. Ex. 1/4 Unit Block P. Quad L. Quad Sixteenth E.
CLEAR BDY LK S 4-13-84-11	10004130841	Nov 23, 2004	1256 🧹	
CI FAR Raul 1 + 11.12.84.11\u/R	10011120941	IGLA 2005	1265	
ailable Logs				Search G By Field G By DLS/NTS Clear Query

2. Highlight the Well Name that you wish to change the UWI / API, in the Well List portion of the window, and the logs for that well will appear in the Log List portion of the window. Highlight or click on any of the logs available

for that well in the Log List. Then, click on the selected well / log will open accordingly

3. Click on the Well selection, located under the Edit menu selection on the Menu bar. This will activate the Well Window.

API		35-139-23	3155			-	Surf. Loc	ation:	35-139-23155				
Well Na	me	Tutorial V	/ell			-			34-138-23155				
00	erator:	ABC Oil &	Gas			_			ABC Oil & Gas		Permit #	32423	
Drilling Cont	ractor:	Drill em U	p						Large		Field Barn		
- 0	County:	Silverado					F	lin #·					
Province/	/State:	Texas					Elev	ations				Collar 219	
C	ountry:	USA					Re	eferenc	B: 234		Ground /	Collar: 1213 Tange: 218	
- Surface Co	ordinate	s						~			Casing r	lange, jeno	
Latitude	30.1612						N/S:	400 f	t North of the Sou	ith bounda	ry		
Longitude	97.4433	1				_	E/W:	550 f	t East of the Wes	t boundary	(
- Intermediate	e Casing	Point Co	ordinate	s									
					N/S: 1345 ft North of the South boundary								
Longitude 974434				E/W: 520 ft East of the West boundary									
- Bottom hole	Coordir	nates											
	30,1635						N/S:	9600) ft North of the S	outh boun	darv		
Longitude						-	E/W: 1027 ft East of the West boundary						
UTM Surfac								-			÷		
Northing:	3349894	4				_	Easting	6211	61				
Hole Direction	n: Hor	izontal	-	Г	Faulted		∏ Dev	viated	Hole ID:	st of Many			
Depths										Date	Time	Work Schedu	
Drillers T.D. (Tally) MD		T.D. Drill			.D. Logger VD MI		Loggers TVD	T.D.	Spud:	Aug 13, 3	2012 08:00	Curves	
10500	7962.1		and the second second	7962.1	- m	_	170	_	T.D.:	Sep 12, 3	2012 09:40	Mud Types	
KB to Groun	1	1 10	Fill	1/302.1	Plugback		 Sidetrack		Rig Release:	Sep 17, 3	2012 08:00	Dir. Surveys	
17	2		-		8027		8035	-				- Det. Lith.	
		Reference	-		Water D			-	weil Status.	Potential	Uil Well	Abstract	

4. **Click** on the **button** in the Well window to activate the appropriate window shown below: This window will be filled in with the original information when the Log / Well were first created.

UWI / API Format
Use: API/I UWI/API:
DLS (Dominion Land Survey System)
Survey System Loc. Ex. LSD Sec. Township Range E/W Mer. 0/A Event Sequence
1 0 0 0 0 0 0 0
NTS (National Topographic Series System)
Survey System Loc. Ex. 1/4 Unit Block P. Quad L. Quad. Sixteenth Event Sequence
API Code / Name
35-139-23155
OK Cancel

- 5. Click your mouse cursor into the name section and make the necessary changes.
- 6. Click on the **DK** button.
- 7. Click on the **Save** button. If the well record has been saved you will be prompted with a 4 option system message.
- 8. Click on the Exit button.

You have now successfully changed the UWI or API Code for a well. We have automated all the logs associated with the original Well to be reallocated with the new Wells UWI. For your information all data for a well is stored under the UWI and not the well name.

Open

Opens an existing log

1. Click on the Open Log button or select Open, under the File menu selection, to activate the Open Log window.

Connect		Open Well				?
Disconnect		Most Recently Opened Logs				Search Wells by Field or DLS/NTS
Access Registration	•	V Tutorial Well V ABC Oil Anywhere 12-25 Gamma	Deulas		^	
Access Registration	· · ·	V ABC OI Anywhere 12-25 danina V Tutorial Core Log	naylog		~	Field Note: Wildcards : % = any range, _ = single charac
New	Ctrl+N	1				Enter Search String
0000	Ctrl+O	Well Name	UWI	Spud Date	Total [🔨	· · · · · · · · · · · · · · · · · · ·
Open	Cun+O	ABC COMPANY ABC Oil Anywhere 12-25	H20 ABC 0il 12-25	Feb 25, 2001	1037	Choose field to search
Close		ABC OILAnywhere 12-25	ABC 01 12-25	Feb 25, 2001 Feb 25, 2001	1037	
		MACLI PINECK 2-5-31-28	10002050312	Nov 30, 2005	1276	UWI _
Import / Export	•	Anybody Oil and Gas	10012020451		3995	DLS (Dominion Land Survey System)
ASCII Export	•	Anyone Enchant	10004100141	Sep 12, 1996	678	Survey
		Aramco Carbonate Template	Aramco			Survey System Loc, Ex. LSD Sec. Township Range E/W Mer. 0/A E.S.
Backup		ASE051058LOG	ASE051058			
		BG CANADA CARIBOU 5-6-J 9.				
Print Log	Ctrl+P	bob	bob	Sep 1, 2006		NTS (National Topographic Series System)
Print Morning Report		Chattak 2B	Chattak 2B	Sep 10, 2005	718.6	Survey
Print Well End Report		CLEAR BDY LK S 4-13-84-11	10004130841	Nov 23, 2004	1256	System Loc. Ex. 1/4 Unit Block P. Quad L. Quad. Sixteenth E.
		CI FAR Rdul ks 11.12.84.11W6	10011120841	LU 4 2005	1265	
Print Reports to Word®		J.S	J.		2	
Print Setup		Available Logs				Search @ By Field @ By DLS/NTS Clear Query
Exit		V ABC Oil Anywhere 12-25 Gamma V ABC Oil Anywhere 12-25 Normal	Presentation			
		V ABC Oil Anywhere 12-25 TVD Pre	esentation			Open Cancel
Survey Viewer		1				

- 1. Locate the well you wish to open either by querying or scrolling through the Well List portion of the window and **Click** on the **Well Name** so it becomes highlighted, and the logs available for that well will appear in the **Log List** portion of the window.
- 2. Click on the log name you want to open. It will become highlighted.
- 3. Click on the **Dpen** button and the selected log will open accordingly. Please keep in mind that **Power*Log / Core & Curve™** allows you to have multiple logs open at once.

The **Recent Logs** portion of the window indicates the last 10 logs / wells opened. You may wish to select one of these rather than looking through the well list. Also if you are reopening the last well used it is already highlighted in

Open

the Recent Logs list and can be reopened easily by clicking on the key on your keypad.

button or by depressing your enter

<u>Note</u>: Logs with the letter "V" in front of their names are <u>Vertical</u> logs, and can only be used within **Power*Log™** or **Power*Core™**. Likewise, **Logs** with the letter "**H**" in front of their names are <u>Horizontal</u> logs, and can only be used within **Power*Curve™**.

How to Sort the Well List

(Well Name, UWI, Spud Date, Total Depth, Field, Pool, Hole Direction, Province/State, License #)

1. Click on the Copen Log button or select Open, under the File menu selection, to activate the Open Log window.

Tutorial Well ABC Oil Anywhere 12-25 Gamma Ray L Tutorial Core Log			< <	Search Wells by Field or DLS/NTS Field Note: Wildcards : % = any range, _ = single chara Enter Search String
Well Name Horizontal Tutorial Well Tutorial Core Log HUSKY ANSELL 913-51-13 BB Canada H-R Nubbles 26-66 Husky Ansell 15-13-11-3 ECA HZ KELLY C45-H 33P-11 Kereco et al H-Progress 3-1378-10 TASMAN BDYLKS 7-33 BG Canada H-ZahlBou Les J. 94-6-7 ONRI LAZ HELY C45-H 33P-11 TASMAN BDYLKS 7-33 TASMAN BDYLKS F-5 CINRL HZ HELWET a-81F-94-P-11 TONINU IGLT BARONS 08-23 Valable Logs BG Canada H-20 Nubbles 2-26-6 hz le BG Canada H-20 Nubbles 2-26-6 hz le	UWI 10015320632 10014190122 20040286094 10015130511 20040286094 10015130511 200400494093 20060061094 20060061094 20060061094 10011071010 10006505081 2024017F094 10003291122	Spud Date Jan 12, 2007 Nov 12, 2006 Sep 19, 2006 Sep 1, 2006 Jun 2, 2006 Jun 30, 2006 Jan 5, 2006 Jan 5, 2006 Jan 1, 2006 Jan 2, 2006 Dec 15, 2005 Dec 15, 2005		Choose field to search UVVI Choose field to search UVVI DLS (Dominion Land Survey System) Survey System Loc. Ex. LSD. Sec. Township Range E/AV Mer. 0/A E.S. NTS (National Topographic Series System) Survey System Loc. Ex. 1/4 Unit Block. P. Quad. L. Quad. Sixteenth E Search

2. The default sorting in the Open Log window is on Well Name. If you wish to sort on any other criteria, you simply have to **click on its heading indicator** at the top of the Well List. By doing so, you will sort the window with respect to that criterion. The Example above is sorted by spud date in ascending order. If you click on the heading indicator again it will reverse the order as shown in the example below with Spud date in descending order.

Tutorial Well ABC Oil Anywhere 12-25 Gamma Ray Lo Tutorial Core Log	5	Fearch Wells by Field or DLS/NTS Field Note: Wildcards : % = any range, _ = single charac Enter Search String		
Well Name	UWI	Spud Date	T ^	
Anyone Enchant	10004100141	Sep 12, 1996	6	
Underbalanced 12-25	underbalanced	Feb 19, 2001	2	Choose field to search
ABC Oil Anywhere 12-25	ABC 0il 12-25	Feb 25, 2001	1	UWI 👻
ABC Oil Anywhere 12-25	ABC Oil 12-25	Feb 25, 2001	1	
Gamma Ray Energy 16-12	Gamma Ray	Dec 1, 2001	1	DLS (Dominion Land Survey System)
Tutorial Well	10014320632	Jul 12, 2003	1 🔳	
Anybody Oil and Gas	10012020451	Jun 26, 2004	3	Survey System Loc. Ex. LSD Sec. Township Range E/W Mer. 0/A E.S.
CLEAR BDY LK S 4-13-84-11	10004130841	Nov 23, 2004	1	System Edd. EX. ESD Sec. Township Hange Erw Mel. OrA E.S.
CLEAR Bdy Lks 11-12-84-11W6	10011120841	Jul 4, 2005	1	
Husky HZ Cordel 11-3-43-16	10011030431	Jul 28, 2005		
Compton Connemra 3-11-16-27	10003110162	Aug 22, 2005		NTS (National Topographic Series System)
Chattak 2B	Chattak 2B	Sep 10, 2005	7	Survey
Mancal Northgate 3HZ 4D9-5-3A3-4	19103040010	Sep 25, 2005	12121	System Loc. Ex. 1/4 Unit Block P. Quad L. Quad. Sixteenth E.S.
Il Hudru Sindair 5.2.75.13WE	10005020751	0 -+ 7 2005	·> >	
ailable Logs				Search @ By Field @ By DLS/NTS Clear Query

How to Query the Well List (By String Search)

2. Click on the Copen Log button or select Open, under the File menu selection, to activate the Open Log window.

V Tutorial Well V ABC 01 Anywhere 12-25 Gamma Ray Lo V Tutorial Core Log V ABC 03 Animeters 12-25 Neural December			~	Search Wells by Field or DLS/NTS - Field Note: Wildcards : % = any range, _ = single character Enter Search String	UWI WELL_NAME SPUD_DATE DRILL_TOTAL_DEPTH FIELD
Well Name Aryone Enchant Underbalanced 12:25 JABC OI Anywhere 12:25 Gamma Ray Energy 16:12 Tutorial Well Anybody Oil and Gas CLEAR BDY LK S 4:13:84-11 CLEAR BUY LK S 1:1-264-11W6 Marcal Northgate 3HZ 4D:95-3A3:4 Where Science 5:275:13:0/6 Wailable Logs V ABC Oil Anywhere 12:25 Normal Presental V ABC Oil Anywhere 12:25 Normal Presental	tation	Spud Date Sep 12, 1996 Feb 13, 2001 Feb 25, 2001 Feb 25, 2001 Jul 22, 2003 Jul 26, 2004 Jul 28, 2004 Jul 28, 2005 Aug 22, 2005 Sep 10, 2005 Get 7, 2005	T ▲ 6 2 1 1 1 3 1 1 7 7	Any Choose field to search WELL_NAME DLS (Dominion Land Survey System) Survey System Loc. Ex. LSD Sec. Township Range E/W Mer. 0/A E.S. WTS (National Topographic Series System) Survey System Loc. Ex. 1/4 Unit Block P. Quad L Quad Sixteenth E.S. Search By Field By DLS/NTS Clear Query Open Cancel	POOL HOLE_DIRECTION PROVINCE_STATE LICENSE

- 3. Choose the field to search criteria by clicking on the drop arrow in the search portion of the window. This will activate a drop list and click on your selection. You have many field strings to search with. Then type in your search criteria in the Enter String field. The example shown above is any Well Name with ANY in it anywhere.
- 4. You can **choose a search type** in the drop box beside the Search string you have type or selected. The default is **like** so if in this case the ANY can be anywhere in the well name.
- 5. Click on the Search button. This will redo the Well List with those Well Names that meet the specific criteria. The search results are shown below.

ipen Well		28	
Most Recently Opened Logs V Tutorial Well V ABC 00 Anywhere 12:225 Gamma Ray Log V Tutorial Core Log V ABC 00 Anywhere 12:25 ABC 001 12:25 TMABC 01 Anywhere 12:25 ABC 001 12:25 Feb 25, 2001 TMABC 01 Anywhere 12:25 ABC 001 12:25 Feb 25, 2001 TMABC 01 Anywhere 12:25 ABC 001 12:25 Feb 25, 2001 TMABC 01 Anywhere 12:25 ABC 011 02:20451 Jun 26, 2004 TMAPbd 001 and Gas 10004100141 Sep 12, 1996 Anyoone Enchant	▲ ▲ ■ </th <th>Search Wells by Field or DLS/NTS Field Note: Wildcards : % = any range, _ = single character Enter Search String Any Choose field to search WELL_NAME</th> <th>Equal to (=) Greater Than (>) Less Than (<) Greater Than or Equal (>=) Less Than or Equal (<=) Like</th>	Search Wells by Field or DLS/NTS Field Note: Wildcards : % = any range, _ = single character Enter Search String Any Choose field to search WELL_NAME	Equal to (=) Greater Than (>) Less Than (<) Greater Than or Equal (>=) Less Than or Equal (<=) Like
		Cancel	

6. **Click** on the **Clear Query button** to refresh the list with all the Wells in the database.

Close

Closes the currently active log

Click on Close, under the File menu selection, to close the current or active well or click on the Kite icon.

Note: You do not have to save any changes prior to closing a log, because all work performed on a log is automatically saved to the **Power*Geology** database.

File		
Connect		
Disconnect		
Access Registration		۲
New	Ctrl+N	
Open	Ctrl+O	
Close		
Import / Export		۲
ASCII Export		۲
Backup		
Print Log	Ctrl+P	
Print Morning Report		
Print Well End Report		
Print Reports to Word®		
Print Setup		
Exit		
Survey Viewer		

Export Log / Well

Allows you to export log configurations, well information, system symbols and your Geology Expansion Dictionary

Under the File menu selection, select Import / Export and then select Export Log / Well from the sub-menu. Or, you

can click on the Export button on the Toolbar. When you enter the Export window from the main Power*Log / Core & Curve™ screen, the Export Log/Well window automatically defaults to the currently active log.

		Power*Log Data Transfer: Export V 12
		Log Anyone Enchant Composite Vert Export File
		File Name U:\PowerSuite_V12\Backup\Anyone En
		Well Anyone Enchant M Password Again:
		UWI: 100041001416W400 Comments: This is an entire well export.
		✓ Log Configuration
File		🔽 Entire Well
Connect		I Today's Interval 1200 to 1400
Disconnect		Go to Import
Access Registration		
New Ctrl+N		Export Interval Interval Based Data: All None Record Based Data: All None
Open Ctrl+O		0 Annotation Abandonment Plug
Close		Date Bit Record Detailed Lithology Casing String
Import / Export	Import Log / Well	Graphics Core
ASCII Export		Lithology Curves Lithology Description Directional Survey
Backup	Import / Export LAS	MDT Runs Formation
	Import Surveys	Delete NBR Symbology Mud Type Oil Staining Multiple Array
Print Log Ctrl+P	Export Surveys	Shat Europt Percent Test
Print Morning Report	Import AGS Data	Sample / Core Description Wireline Logging
Print Well End Report	Import Core Data	Export all Generic Categories Snieder Rock Type (C) Curve Fills
Print Reports to Word®	ASCII Import	Export all wells Snieder Rock Type (G) SideWall Cores Generic Fills
Print Setup	Import Dip Meter	Core Header Information
Exit	Import MDT	Export Symbols Lithology Interbeds Core Box/Row Information
Survey Viewer	Import Slide Rotate	Export Geology Dictionary Core Plugs
	Export INI Settings File	Backup All Exit
	Import INI Settings File	

- 1. Click on the **button** to activate a list of logs in your database. Then, select the log for export by **double clicking** on it.
- 2. If the log has a Primary Well associated with it, the Well field will default to the Primary Well. If there is no

Primary Well or you wish to export a different well, select the well to be exported by **clicking** on the **button** to activate a list of the Wells available in your database. Then, **double click** on the well that you wish to export.

3. The Log Configuration check box 🔽 should be activated (checked), when you are exporting a log for the first time or if you have changed the log's track or layer configurations.

4. The Entire Well check box ✓ should also be activated (checked), if you are exporting your well for the first time. Note: This is a good way to back-up your well's information and should be done on a daily basis, so that if your database becomes corrupted or your hard drive fails, you have a way to restore or recover your data. If you are transmitting your files to another location on a daily basis, the Entire Well check box ✓ should be used until the file size (and resulting transmission time), becomes too large. After this point, it is recommended that you use the Morning Report check box ✓, instead, to export only a portion of your well's morning data and should be used in conjunction with the Export Interval portions of the window, including Interval and Record Based Data.

5. Activate the **Today's Interval** check box 🗹 and then enter a set of values into **Today's Interval**.

<u>Note</u>: The values entered into **Today's Interval**, within the **Export Log/Well** window, will automatically be displayed in the **Today's Section** print interval part of the **Print Log** window when the log/well is imported.

6. If you activated the Entire Well check box , please proceed to Step 11.

7. You may now also wish to activate the **Morning Report** check box **and then select a single** date for export **Date**...

from the **Morning Reports** by clicking on the ^{Date...} button and then **double clicking** on the selected **Date** from the **Morning Date From** list window.

- 8. To select a <u>range</u> of dates for export, however, simply **click** on the **button** to activate the **Morning Date To** list window and then **double click** on the final **Date** to be exported. Then, every **Date** between this one and the one selected in **Step 7** will then be exported.
- 9. Enter the intervals of the **Well** that you wish to export in the **Export Interval** fields. After you have typed in the two (2) intervals, press the **Tab** key. This will cause the interval range you have just entered, to be displayed in the list window. The numbers you enter here will determine which **Interval Based Data** is exported.

**Note that multiple interval ranges can be added to this interval list box. **

10. From the lists of Interval and Record Based Data, highlight the data that you wish to export.

<u>Note</u>: If you are only exporting intervals, it is recommended that you choose the **buttons on the Interval** and **Record Based Data.**

If you are exporting a specific interval, your window should now look like the window shown below.

Power*Log Data Transfe	: Export V 12	
Log Anyone Enchant C Well Anyone Enchant UWI: 100041001416W4I ✓ Log Configuration □ Entire Well ✓ Today's Interval [900 ✓ Morning Report Date	File Name C 00 Password: Comments: to 1200 To	NowerSuite_V12\Backup\Anyone En
Export Interval 450 to 500 800.00 - 1200.00 450.00 - 500.00	Interval Based Data: All None Annotation Date Detailed Lithology Lithology Description MDT Runs UND Charlen and	Abandonment Plug Bit Record Casing String Core Curves Directional Survey Formation
Delete Start Export Export all Generic Categories Export all wells Export Symbols Export Geology Dictionary	NBR Symbology Oil Staining Percent Sample / Core Description Slide / Rotate Snieder Rock Type (C) Snieder Rock Type (G)	Mud Type Multiple Array Test Work Schedule Curve Fills SideWall Cores Generic Fills Core Header Information Lithology Interbeds Core Box/Row Information Core Plugs
Backup All		Exit

Interval Based Data:

Annotation: Any annotation on the log over the exported intervals.

Date: The information in the Date layer of the well over the exported intervals.

Detailed Lithology: The Detailed Lithology on the log over the exported intervals.

Graphics: Any graphics inserted onto the log over the exported intervals. Theses graphic files can be pretty large so the user must be careful about sending these on a daily basis.

Lithology: Includes all lithology-related tracks and layers over the exported intervals.

Lithology Description: The Lithology Descriptions on the log over the exported intervals.

MDT Runs: The information that is captured in the MDT Reports.

NBR Symbology: The information that is captured on the core logs that have non bed restricted layers such as Trace Fossils, Bioturbation, Sedimentary Structures, Diagenesis, Fractures, Accessories.

Oil Staining: The Oil staining data entered onto the log over the exported intervals

Percent: Any of the Generic Percent Layers data.

Sample / Core Descriptions: The Sample Descriptions you have entered into the Sample or Core Description Reports over the exported intervals.

Slide / Rotate: The Slide / Rotate data entered onto the log over the exported intervals.

Sneider Rock Type (G): The information in the Sneider Rock Type (Geo) layer of the well over the exported intervals.

Sneider Rock Type (C): The information in the Sneider Rock Type (Core) layer of the well over the exported intervals.

Record Based Data:

Double click on **Curves**, **Core**, and **Formation** in the **Record Based Data** list to show a list of curves, cores, and formations. Highlight the specific curves, cores and formations to export them. To export all Curves, Cores, or Formations, just highlight "Curves," "Core," and "Formation."

To add all data from a list, **click** on the **All button** located above the appropriate list. If you decide not to add any

data from a list, **click** on the **button** above the appropriate list.

- 11. If you want to encrypt the file, enter the same password into the Password and Again fields.
- 12. Type any comments about the file/well/log to be included with the export header information.
- Name the export file by clicking on the File Name... button and then select a destination and a filename. Do not type in a file extension other than .EXP. If you omit the extension, an .EXP file extension will be added, automatically, to your filename by Power*Log, Core and Curve™.
- 14. Click on the Start Export button.

<u>Important Note</u>: If your file is too large to fit on a floppy disk, you may have to export the file to your hard drive and then use a compression utility to fit the file onto a single disk. Common compression utilities include **Microsoft Backup**, **PKZip** by **PKWare**, and **Norton Utilities**.

Also, if you have limited free hard disk space, you may not be able to save a file directly to a floppy, because **Power*Log / Core & Curve** ™ first writes data to the hard drive and then sends it to the floppy drive.

Exporting the Geological Expansion Dictionary, User defined Symbols or all your User defined Generic Category choice list...

It is possible to export your geology dictionary, user defined symbols, or all your user defined generic category choices to another computer, so that any alterations you have made to the standard dictionary will translate properly, when you export logs to another location.

1. In the Export window, select a file name for the exported version of your dictionary. Do this by **clicking** on the File Name.

button, and selecting a file name from your computer, or creating a new one.

- 2. a.) Click on the **Export Geology Dictionary** button and you will be prompted to verify the export.
 - b.) Click on the Export Symbols button and you will be prompted to verify the export.

c.) Click on the **Export Generic Categories** button and you will be prompted to verify the export.

3. Click on the Yes button to export your selection.

Important note: If you are importing a Geological Dictionary from another location, be sure to export your own Geological Dictionary to another directory or floppy, so that you will be able to access your own Geological Dictionary at a later time. Otherwise, your existing or original Geological Dictionary will be <u>overwritten</u> by the imported Geological Dictionary.

Important note: If you are importing a **System symbol set** from another location, be sure to export your own **System symbols** to another directory or floppy, so that you will be able to access your own **System symbol set** at a later time. Otherwise, your existing or original **System symbol** will be <u>overwritten</u> by the imported **System symbol**.

Exporting all the Well Data at one time...

1. Select **Import/Export**, under the **File** menu selection, and then select **Export Log/Well** from the sub-menu. Or, you can **click** on the **Export Log / Well button** on the Toolbar.

Log Export File
Uwl: Password: Again: Comments: Comments:
Export Interval Interval Based Data: All None Record Based Data: All None 0 to 0 Annotation Abandonment Plug Bit Record Bit Record 0 to 0 Date Date Core Core 1 Uthology Graphics Core Curves Curves 1 Uthology Description Directional Survey Formation
Delete DBF Symbology Muid Type 0I Starting Multiple Array Multiple Array Start Export Percent Test Export all Generic Categories Side / Rote Work Schedule Side / Rote Side / Rote Work Schedule Side / Rote Side / Rote Generic Fills Side / Rote Side / Rote Side / Rote
Export Symbols Lithology Interheds Core Box/Row Information Core Plugs Exit
Click on the Export all Wells button. This will activate a system messa
Warning: All well files in the selected directory previously exported using this feature will be overwritten Do you wish to continue?
Yes No Cancel
Click on the Yes button. This will activate a Choose Directory window

wish to create a new dows Explorer or My Computer. In the example an old wells folder is selected.

Choose Directory	
Control Contro Control Control Control Control Control Control Control Control Co	
	OK Cancel

4. Click on the drive and directory where you wish the well data to be exported to. Then, click on the OK.

button. This will activate the Exporting window.

Exporting
Husky Dodsland 6-22-32-19W3
Lithology Description
Cancel

5. When the export all well data is finished a System Message will be activated as shown below. Click on the ΟK button.

System Message	
Finished exporting all wells to path C:\O	ld wells
ОК	

Exporting everything at one time...

This would include all the Well data, Generic Categories, Well Symbols, Geological Expansion Dictionary, Favorites and all the Power*Suite initialization files .

1. Select Import/Export, under the File menu selection, and then select Export Log/Well from the sub-menu. Or,

you can click on the Export Log / Well button on the Toolbar.

	Power*Log Data Transfer: Export V 12	
	Log Anyone Enchant Composite vert Export File Well Anyone Enchant M File Name C:VPowerSuite_V12\Backu Well Interval M Password: Again: Comments: Vorter Today's Interval 1200 to 1400 File Name Comments: This is an entire well export. Morning Report Date to Interval Based Data: All None Record Based Data: 0 to O Annotation Date Casing String Casing String Directional Survey Lithology Directional Survey Formation Survey	
	Delete NBR Symbology Multiple Array Start Export Percent Test Sample / Core Description Wireline Logging Work Schedule Export all Generic Categories Snieder Rock Type (C) Side // Rock Type (G) Side/Wall Cores Export all wells Snieder Rock Type (G) Side/Wall Cores Generic Fills Export Geology Dictionary Backup All Core Plugs Core Plugs	
. Click on the	Backup All button. This will activate a system mes	ssage.
	This will export all the information of your current setup, including wells, symbols, dictionary terms and user created iter Warning: All well files in the selected directory previously exported using this feature will be overwritten Do you wish to continue? Yes No	ns.
	Yes hatten This will activate a Ohanna Directory via da	V

3. Click on the **button**. This will activate a Choose Directory window. You may wish to create a new folder for these well. This cannot be done from this window and must be done through Windows Explorer or My Computer. In the example a PowerSuite_V12\Backup\Todays backup folder is selected.

Browse for Folder
Select the Backup Directory of your choice
PowerSuite_V12 PowerSuite_V12 Detabase LOGO
PowerCurve-Floating Printer settings REPORT REPORTI REPORTI REPORTM Reportmi
OK Cancel

4. Click on the drive and directory where you wish the well data to be exported to. Then, click on the DK button. This will activate the Exporting window.

1 0	
Exporting	
Husky Dodsland 6-22-32-19W3	
Lithology Description	
(Cancel)	

5. When the export all well data is finished a System Message will be activated as shown below. **Click** on the

button. Below you will view the folder created in the PowerSuite V12 \ Backup \ Todays backup with files and their names.

	🖃 🚞 PowerSuite_V12		🖬 ABC Oil Anywhere 12-25 Normal Presentatio	187 KB	EXP File
	🖃 🚞 Backup		BABC Oil Anywhere 12-25 TVD Presentation.exp	186 KB	EXP File
	🗀 Todays backup		🖬 ABC Horizontal.exp	186 KB	EXP File
	🗉 🚞 Database		🖬 ABC Oil Anywhere 12-25.exp	186 KB	EXP File
	🚞 LOGO		🖬 Anybodies Oil Sands Log.exp	1,537 KB	EXP File
	🗉 🚞 PowerCurve-Floating		🖬 Gamma Ray Energy 16-12 revised.exp	103 KB	EXP File
-	🚞 printer settings		🖬 testing with interlapping.exp	5 KB	EXP File
Export Backup Finished	🗉 🚞 REPORT		🖬 Water Saturation Demo Log.exp	477 KB	EXP File
Export Duckup I maned	🗉 🚞 REPORTI		🖬 Fill Test Log.exp	103 KB	EXP File
	C REPORTM	_	🖬 Marks Fill Test-02 log.exp	91 KB	EXP File
Backup Export finished successfully	🚞 Reportmi		📼 Underbalanced Log Presentation.exp	230 KB	EXP File
	🗉 🚞 symbol		🖬 GenericCategories-Oct19-09.exp	5 KB	EXP File
ОК	🗉 🚞 symbolm		🖬 GeoDictionary-Oct19-09.exp	12 KB	EXP File
K	C SYSLOG		🔤 pgeology32-Oct19-09.ibf	26 KB	IBF File
	C SYSLOG_CORE		PowersuiteSymbols-Oct19-09.exp	264 KB	EXP File

You will notice that the well export will have the log names, and the other exports associated with this backup all feature will have a time stamp after the file type.

Import Log/Well

Allows you to import a file into your database

Select Import/Export, under the File menu selection, and then select Import Log/Well from the sub-menu. Or, you can use the Englishing Import button on the Toolbar. This will activate the Import window

File			Power*Log Data Transfer: Import V 12		
Connect			Files		Go to Export
Disconnect Access Registration	•		Time of Export File Name All	None	
New Open Close	Ctrl+N Ctrl+O		2001/11/12.16:23 t/sldwells/0111210 exp 2003/09/23.15:05 t/sldwells/03092302.exp 2004/02/23.11:30 t/sldwells/01025108.exp 2008/06/03.14:55 t/sldwells/01.01015.26w4m.exp 2009/09/08.14:17 t/sldwells/01.01.42-03w5m.exp 2009/09/08.14:17 t/sldwells/01.01.742-03w5m.exp 1.50.104/vells/8101.01.24:03w5m.exp		Delete Files Exclude Files
Import / Export	Þ	Import Log / Well	Not Open T:\OldWells\01010501.exp Not Open T:\OldWells\020125.EXP	~	Start Import
ASCII Export Backup Print Log Print Morning Report Print Well End Report Print Reports to Word(Print Setup		Export Log / Well Import / Export LAS Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter	File Header: Time of Export: 2001/11/12 16:23 Product: POWER*SUITE Version: 4.0 Description: Log: 981384 02 RICH 9:24:35:22 Well Name: 981384 02 RICH 9:24:35:22 UWI: 102092403522W400 Storage Units: Metric [EXPORT 0PTIONS] Log Configuration: Yes Entire Well: Yes Today's Interval: No		
Exit Survey Viewer		Import MDT Import Slide Rotate	0.00 to 0.00 Morning Report: Interval: Interval Data:		
		Export INI Settings File Import INI Settings File	Record Data:	~	Exit

Importing a Log/Well...

1. Click on the **Files...** button to browse through your drives/directories for the file(s) you wish to import. Note that files available for importing will have an **.EXP** file extension. Any of the files that you select will then be added to the **File** list. Please make sure that the files you wish to import are highlighted (selected), in the list prior to importing.

<u>Note</u>: In situations where numerous **Export** files are all being imported at once, **click** on the **highlight** <u>all</u> of the **Export** files displayed in the **Import** window.

2. If any of the files are encrypted, a window will appear, stating that the file format is not recognized (if the files are

not encrypted, proceed to **Step 5**). **Click** on the **button** in this window and a **Password** box will then appear with the filename and an empty field for you to enter the correct **Password** into.

- 3. Type in the **Password**, using **<u>UPPERCASE</u>** letters only.
- 4. After entering the **Password**, **click** on the **button** to decrypt the file and place it in the **File** list with the file's contents displayed in the **File Header** list field.
- 5. The **Import Log/Well** window will now be displayed with the details of the file(s) to be imported. Select/highlight

the file(s) to be imported. Use the **All button** to select all of the files or use the **button** to select none of the files. Note that you can select or turnoff individual files by simply clicking on them with your mouse.

Note: The Exclude Files button will remove the selected/highlighted files from the import list, but will not delete them. The button, on the other hand, will completely erase the selected/highlighted files from their directory. Once deleted, these files will no longer be recoverable.

- 6. Click on the **Start Import** button to activate the following system message, "Do you really want to IMPORT the highlighted files?"
- 7. Click on the Yes button to proceed with the import.

<u>Note</u>: If you click on the "Yes" button, and the file you are importing contains the information from an Entire Well, the following system message will be activated, "About to IMPORT ENTIRE WELL data. All information associated with this well in the database will be OVERWRITTEN. Continue?"

- 8. Click on the Yes button.
- 9. Upon completion of the import, the following system message will then be activated, "*Data has been imported successfully.*"
- 10. Click on the **button** to confirm the successful import of the data.

Go to Export button will take you to the Export Project/Well window.

LAS Import

The

Allows you to import Log ASCII Standard (LAS) formatted files into the database. We have separated these import procedures into 2 sections. The first section is How to Import an LAS data File. The second section is How to Import an LAS data file with a saved mapping file. We now have the ability to Import Version 2 or 3 file formats.

The user can also import a single curve into an existing curve by referring to the Right Click import method.

If the ASCII files you receive looks like the file shown below it is an LAS file. The ASCII data can be directly imported into the database as long as the Well exists in the database. You can now proceed with "How to import an LAS data File". If it does not look similar you will have to proceed with "How to Import an ASCII data file".

-Version Information VERS. 3.00 :CWLS LOG ASCII STANDARD - VERSION 3.00 WRAP. NO :One line per depth step -WELL INFORMATION #MNEM_UNIT DATA DESCRIPTION STRT.FT 178.46040 :START DEPTH STEP.FT 2206.44720 :STOP DEPTH STEP.FT 0.15240 :STEP LENGTH NULL. 999.22000 :Null value COMP. ABC et al Anywhere :Field LOC. 1111/09-12-015-SW4M :Location PROV. ABC et al Anywhere :Field LOC. 1111/09-12-015-SW4M :Location PROV. Alberta :Province DATE. 14-MAR-96 :Run Date UWI. 111012601505W400 :Unique Well ID LIC. 12366 :License Number SRVC. Anywhere Logging Company :SERVICE COMPANY -CURVE INFORMATION #MNEM.UNIT API CODE CURVE DESCRIPTION DEPT .FT 00 001 00 00 : 1 Depth GR .GAPI 01 310 01 00 : 2 Gamma Ray DT .US/M 01 520 80 00 :3 DELTA-T SP .MV 01 010 01 00 :4 Spontaneous Potential LIDOHMM 01 220 100 00 :8 Tide Date LIS. Latero-Log Dep Shallow (Resistivity) LLS .OHMM 01 220 01 00 :8 Latero-Log Dep (Resistivity) HD .MM 01 220 01 00 :8 Latero-Log Dep (Resistivity) HD .MM 01 220 01 00 :7 Hole Diameter DEPF .FT 01 636 000 :8 Tide Depth -PARAMETER INFORMATION #MNEM_UNIT VALUE DESCRIPTION HDEP .FT 01 636 000 :8 Tide Depth -PARAMETER INFORMATION #MNEM_UNIT VALUE DESCRIPTION HDEP .FT 01 636 000 :8 Tide Depth -PARAMETER INFORMATION #MNEM_UNIT VALUE DESCRIPTION HDEP .FT 01 636 000 :8 Tide Depth -PARAMETER INFORMATION #MNEM_UNIT VALUE DESCRIPTION HMMEM_UNIT VALUE DESCRIPTION HMMEM_	-			mai you wiii i		p10000				on data me	•	
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If the well does not exist in your database please refer to "Starting *a New Log/Well*" to create a new well so that you can import the curve data.

How to Import an LAS data File

File

If the file format is LAS V3.0 then we can import, beside curve data, Formation, Test, Inclinometry and Core Data directly into the database. If it is LAS V2.0 then we will only be able to import curve data. This method allows the user to import multiple curves at a time as opposed to the right click on a curve layer which allows the user to import a single curve.

1. Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS

and then select LAS Import from the pop out-menu or simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

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Print Reports to Word® Print Setup…		ASCII Import Import Dip Meter		File name: 410MAIN1.LAS	Open
Exit Survey Viewer		Import MDT Import Slide Rotate		Files of type: LAS (*.las)	Cancel
		Export INI Settings File Import INI Settings File			

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data.

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log definition	1001.50	1789.00	1260.00	1188.00	10.99	-1.00	-1.00	395.00	2.00	
 drilling_definition 	1002.00	2227.00	1801.00	1809.00	10.23	-1.00	-1.00	395.00	8.00	
 drilling_data 	1002.50	2694.00	2172.00	2332.00	10.23	-1.00	-1.00	395.00	9.00	
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Overview of window

The left hand side of the LAS Reader window (shown on the right) allows the user to see the tree view of the data file format including the different data, parameter and definition blocks. The tree enables the user to select different sets of data or definitions. We have the choice to import these data types into the predefined data sets such as curves, Inclinometry, Tests, Tops and Core Data within the Power*Suite application. We default the window to select the log data or curve data if it is available

The upper right hand side of the LAS Reader window (shown below) allows the user to see the data associated with the different data and parameters and definition blocks.

DEPT	AT10	AT20	AT30	AT60	AT90	DT	CAX	CAY	
300.2280	8.5316	9.1671	9.4936	10.4095	10.5835	330.0000	244.2500	166.	
300.3804	8.2609	8.8518	9.1924	10.1445	10.3046	332.2800	244.7250	166.	-
300.5328	8.0506	8.6503	9.0080	10.0700	10.2195	331.1200	245.2500	166.	
300.6852	8.0136	8.6582	9.0330	10.1819	10.3426	325.9600	246.3250	166.	
300.8376	8.2003	8.8681	9.2689	10.4961	10.6618	322.0400	247.2250	166.	
300.9900	8.0136	8.5552	8.9254	10.1072	10.2572	322.7600	248.7000	166.	
301.1424	7.4719	7.9475	8.1401	9.1840	9.3031	326.0400	251.2250	166.	
301.2948	7.0897	7.6600	7.6812	8.6423	8.7464	330.1600	252.2250	166.	
301.4472	6.9347	7.4926	7.5549	8.4300	8.5316	333.9200	253.3750	166.	
301.5996	6.7706	7.2749	7.4719	8.2533	8.3451	336.4800	255.4500	166.	
301.7520	6.7209	7.2415	7.4650	8.2154	8.3067	337.4400	256.2500	166.	
301.9044	6.7395	7.2282	7.4995	8.2838	8.3682	338.4400	257.3000	166.	
<									

The middle bottom portion of the LAS Reader window (Shown below left) displays the parameters or data sets that have been selected from the tree view on the left. These can then be dragged to the import side of the LAS reader.

Name	Desc	Units.	Curve Layer ID	Existing ID	Mapped ID	Action
🗆 🎇 DEPT	1 DEPTH	М	🎥 Drill Rate	Drill Rate		Append
🗆 🎇 AT 10	2 AIT 2 FT. VERT 10" DEPTH	ОНММ	🎆 Gamma Ray	GR		Append
🗆 🎥 AT 20	3 AIT 2 FT. VERT 20" DEPTH	онмм	SP SP	SP		Append
🗆 🎥 AT 30	4 AIT 2 FT. VERT 30" DEPTH	онмм	💦 🗙 Caliper	CAX		Append
🗆 🎥 AT 60	5 AIT 2 FT. VERT 60" DEPTH	онмм	🎥 Y Caliper	CAY		Append
🗆 🎥 AT 90	6 AIT 2 FT. VERT 90" DEPTH	OHMM	🎆 Density Porosity	DPHI		Append
🗆 🎇 DT	7 SONIC INTERVAL TRANSIT TIME	US/M	🎇 Neutron Porosity	NPHI		Append
🗆 🎇 CAX	8 DENSITY CALIPER	MM	📲 PEF	PEF		Append
🗆 🎇 CAY	9 NEUTRON CALIPER	MM	🎆 Deep Induction	AT90		Append
🗆 🎇 DRHO	10 DENSITY CORRECTION	К/МЗ	🎥 Medium Induction	AT30		Append
🗆 🎇 ВНОВ	11 BULK DENSITY	К/МЗ	🎥 Shallow Induction	AT10		Append
🗆 🎥 GR	12 CNFD GAMMA RAY	GAPI	🎇 Total Gas	Total Gas		Append
🗆 🎥 MINV	13 MICRO INVERSE	онмм	🎇 Sonic Curve	DT		Append

The bottom right hand side of the LAS Reader window (shown above right) allows the user to see the different data sets we import as determined by the choose data type selection drop box. Curve names description and units for the curves as well as the curve layers associated with the log that is open and active at the time the LAS Reader window was invoked.

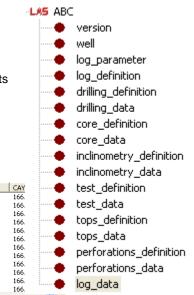
Choose Data Type:	•
	Curves
	Survey Group
	Surveys
	Formations
	Cores
	DST Job
	DST
	Sample Descriptions
	Core Descriptions

The **Choose Data Type** drop box allows the user to import data into different tables within the Power*Suite application. We default this window to curves but we can import other data such as survey Formation, Surveys, Core Descriptions, Sample Descriptions, Core Run, DST Run and DST Period data sets. The user must first pick the data set from the tree and then select the data type so they can then map the data from the file to the database table.

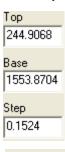
The Curve Depth Column drop box will appear if the curves data type is selected

Curve Depth Column: DEPT the Choose Data Type drop box which will be the default when the LAS Reader application is initiated. Most LAS file formats for curve data will have depth as the first column but this is not mandatory. We will default to the first column or a column identified with the standard DEPT but if it is not the depth column the user can then identify the column with the Curve Depth Column drop box above the columns and their descriptions.

Append Data To Curve This check box will change the curve mapping action from append which will check for existing depths and if they exist the value will be replaced and if the depth does not exist then it will



insert. If the action is replace then it will delete the entire curve and replace it with the new file data. The check box indicates that all the curves will be replaced or appended and the user can right click on the curve laver name to change the action.



The **Top Base Step** portion of the window appears if the curves data type is selected from the Choose Data Type drop box which will be the default when the LAS Reader application is initiated. This allows the user to import all or a portion of the of the curve data from the file into your open log. The user can enter new top and base depths fields to import only a portion of the LAS data file. This interval has do correspond to the lesser or equal to the depths corresponding in the data.

Choose Survey Group:	1	-	
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The Choose Survey Group drop box will appear if you select Surveys from the Choose data type drop box. This allows the user to pick a different survey group to import to. This survey group must be defined before the LAS Reader application has been initiated.

Ŧ Choose Test Run#: • Choose Test #: 1

The Choose Test Run # and Choose Test # drop boxes will appear if you select DST from the Choose data type drop box. This allows the user to pick the correct run # and test number for that run to import the data to. This The DST can be created before in the DST report menu or can be imported through the LAS reader by choosing the DST

Job selection

Import The button commences the import of data from the file that was mapped form bottom middle portion of the window to the data sets on the bottom right hand portion of the window.

LAS Reader Tool Bar



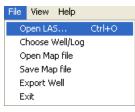
LAS Reader File Menu

File Menu - Open LAS Option

Select Open LAS file, under the File menu selection if you would like to open another LAS file or you did not select one when the LAS reader application was activated. Or,

button on the Toolbar. This will activate the Open LAS you can click on the file window. Navigate the folder structure and highlight the file you want and then

Open click on the button 2 X Open 💌 🗕 🖻 🖛 Look in: 🗀 DEMO 🛅 Imperial Files 410MAIN1.LAS 🚞 Jen for Calgary ExportData_LAS_ByDepth 🚞 LAS Wrapped files LAS 30a_Revised_2010.la 🖉 Metric Horizontal Gamma F photos 6-30 density porosity.las 🖉 t2.las 🕑 test1.las 12-16-81-11Cnw.las > 410MAIN1.LAS File name: Open Files of type: LAS (*.las) Cancel •



File Menu - Choose Well / Log Option

 Select Choose Well / Log, under the File menu selection if you would like to open a different Well / Log or you did not have a log open when the LAS

Reader Application was activated. Or, you can **click** on the **butto** on the **Toolbar**. This will activate the Choose a log window
File View Help

Open LAS	Ctrl+O
Choose Well/Log	
Open Map file	
Save Map file	
Export Well	
E∨it	

- 2. Click on the + beside available wells to open the tree list of the wells in your database.
- 3. Click on the dot beside the UWI of the well to show the list of logs available.
- 4. **Click** on the **log format** (highlight) you want that has the curve layers available to import into.
- 5. Click on the **DK** button. This will open another log / well for you to import data into or export data out of.

File Menu – Open Map file Option

This allows the user to utilize the mapping file saved from the save amp file option to remap the curves / data to the layers or the database table fields.

1. Select Open Map file, under the File menu selection if you would like to open a saved

File View Help Open LAS... Ctrl+O Choose Well/Log Open Map file Save Map file Export Well Exit

ΟK

mapping file for a particular data set. Or, you can **click** on the **button** on the **Toolbar**. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.

N.B. The file extensions are ***.cvm** for curve data, ***.ftm** for formation data, ***.sgc** for survey group data, ***.inc** for survey data, ***.cdm** for core data, ***.tgc** for DST job data, and ***.tmf** for DST interval data.

File Menu – Save Map file Option

This allows the user to save a mapping file after you have clicked and dragged the particular data from the LAS file to the appropriate curve layer or data type in our database table. This file is saved with a certain extension that we add to the mapping file name.

1. Select **Save Map file**, under the **File** menu selection if you would like to save the mapping that you have just finished for a particular data set. Or, you can **click** on

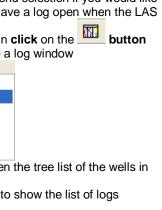
the **button** on the **Toolbar**. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.

File View Help Open LAS... Ctrl+O Choose Well/Log Open Map file Save Map file Export Well Exit Exit

File Menu – Export Well Option

This allows the user to export all of the well's data in an LAS V3.0 data format. This will export every table from the database very similar to the Data transfer module but not in a binary format but in a format that is readable by an LAS reader.

1. Select **Export Well**, under the **File** menu selection or you can **click** on the **button** on the **Toolbar**. This will activate the Save LAS file window.



Choose a Log

🛕 Available wells

■ ■ 100010702703w500 ■ ■ 100013604105w500

100041001416W400
 Anyone Enchant Composite
 Wireline and Lithology Log
 Wireline Log Only
 100081007918W600
 100081007918W601
 100083604817W500
 100121301415W500
 100131506418W500

100141901223W500

100143206323W500

100151806603W600 101C014H094B0800

102010507613W600

mme 102051900229₩100

-

Cancel

	2	Save LAS File	? 🔀
		Save in: 🗀 DEMO	• 🖶 🚔 🔳 •
File View Help		🛅 Imperial Files 🛅 Jen for Calgary	410MAIN1.LAS
Open LAS Ctrl+O Choose Well/Log Open Map file Save Map file Export Well		LAS Wrapped files photos 6-30 density porosity.las 12-16-81-11Cnw.las	Anadarko Hz Jedney a-75- Anyone Enchant Composit ExportData_LAS_ByDepth LAS 30a_Revised_2010.la
Exit		File name: ABC Dil Anywhere 12-25.LAS Save as type: LAS files (*.LAS)	Save Cancel
We will default the file nam	ne to the well name. If th	be file name is OK then click on the	Save button This

2. We will default the file name to the well name. If the file name is OK then **click** on the **button**. This will activate the Curve Export Options window.

Export Interval	
133.5 1200	
Step: 1 Check STEP	
*Uneven Depth Step	
ОК	
	*Uneven Depth Step

3. The user can modify the interval and the step if they so desire. The step may effect the curve data at the end of the file as they step may alter the final readings on an LAS file curve depths. We default to the best step

available but the user can change the step and then **click** on the **Check STEP** button to verify the step is ok.

We take the first curve depth from the shallowest curve and the last curve depth from the deepest of the curves and modify the step so that all the data will have a common step.

4. Click on the button when you are done. This will activate a please wait window and when the window disappears the file has been created in the folder you have chosen.

File Menu – Exit Option

This allow the user to exit the LAS Reader application

Importing / Mapping of LAS Curve data.

 With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

File		_			
Connect					
Disconnect					
Access Registration	•				
New	Ctrl+N			Open	? 🔀
Open	Ctrl+O			Look in: 🗀 DEMO	- ← 🗈 💣 📰 -
Close				,	
Import / Export	Þ	Import Log / Well		Den for Calgary	410MAIN1.LAS ExportData_LAS_ByDepth
ASCII Export	•	Export Log / Well		LAS Wrapped files	LAS 30a_Revised_2010.la
Backup		Import / Export LAS 🔸	LAS Import	Dephotos	Metric Horizontal Gamma F
Print Log Print Morning Report	Ctrl+P	Import Surveys Export Surveys Import AGS Data	LAS Export	6-30 density porosity.las 12-16-81-11Cnw.las	
Print Well End Report		Import Core Data			>
Print Reports to Word® Print Setup		ASCII Import Import Dip Meter		File name: 410MAIN1.LAS	Open
Exit		Import MDT		Files of type: LAS (*.las)	Cancel
Survey Viewer		Import Slide Rotate			
		Export INI Settings File Import INI Settings File			

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Den button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user has the option to **highlight** different **curve / log data** sets from the **tree list** on the left of the LAS Reader window.

e View Help)						/				
š 🖬 🖬 📕	2 4 3					/					
LAS ABC		DEPT	AT10	AT20	AT30	AT60	AT90	DT	CAX	CAY	
/ e vers	rsion	298.5516	7.2884	8.2991	8.4690	9.3633	9.4587	328.5200	235.9250	204.1250	_
/ 🔸 well		298.7040	7.2817	8.1777	8.3759	9.1755	9.2860	327.2000	236.9500	200.2250	
	parameter	298.8564	7.9037		9.0163	9.8771	10.0053	325.5600	238,4000	197.4000	
	definition	299.0088	8.8355	9.9227	9.9961	10.9908	11.1643	322.6800	238,4000	195.3000	
		299.1612	9.3806		10.5738	11.5726	11.7660	318.5200	239,4500	193.1750	
	lling_data	299.3136	9.5286		10.7011	11.5832	11.7769	317,4400	240.1000	191,4250	
	re_definition	299.4660 299.6184	9.2263 8.8273		10.3808 9.9410	11.1335 10.6128	11.3300 10.7902	318.9200 320.2400	241.3000 241.3750	190.0000 186.4750	
		299.6184	8.8273		9.9410 9.8136	10.5128	10.7902	320.2400	241.3750 241.9250	186.4750	
	re_data	299.9232	8.7787		9.8589	10.5155	10.7704	323.2800	241.9250	170.6000	
	linometry_definition	300.0756	8.8192		9.7956	10.6226	10.8002	326.1200	243.0250	167.0750	
	linometry_data	300.2280	8-5316		9.4936	10.4095	10.5835	330.0000	244.2500	166.7250	
	t_definition	< /					1010000	00010000	21112000	10011200	10
	t_data										-
🔶 tops	os_definition							C			i.
🔶 tops	os_data						Choose Da	ata Type: Curves		-	
	rforations_definition										
	I_data	Click and Drag v		: P1 button. Drag the col		file over to the c					2
		Click and Drag v	vith the Left Mouse		Units.	Тор	Curve Layer ID	Existing ID	Mapped ID	Action	
		Click and Drag v Name	vith the Left Mouse Desc 1 DEPTH	button. Drag the col	Units. M		Curve Layer ID Gamma Ray	Gamma Ray	Mapped ID	Append	0000
		Click and Drag v Name DEPT AT10	with the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE	e button. Drag the col	Units. M OHMM	Top 244.9068	Curve Layer ID Gamma Ray SP	Gamma Ray SP	Mapped ID	Append Append	
		Click and Drag Name DEPT AT10 AT20	with the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE	button. Drag the col ERT 10" DEPTH ERT 20" DEPTH	Units. M OHMM OHMM	Top 244.9068 Base	Curve Layer ID Gamma Ray SP PEF	Gamma Ray SP PEF	Mapped ID	Append Append Append	
		Click and Drag & Name DEPT AT10 AT20 AT20	vith the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE 4 AIT 2 FT. VE	ERT 10" DEPTH ERT 20" DEPTH ERT 20" DEPTH ERT 30" DEPTH	Units. M OHMM OHMM OHMM	Top 244.9068	Curve Layer ID Gamma Ray SP PEF Neutron Porosity	Gamma Ray SP PEF Neutron Porosity	Mapped ID	Append Append Append Append	
		Click and Drag & Name DEPT AT10 AT20 AT20 AT30 AT60	vith the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE 4 AIT 2 FT. VE	button. Drag the col ERT 10" DEPTH ERT 20" DEPTH	Units. M OHMM OHMM	Top 244.9068 Base 1553.8704	Curve Layer ID Gamma Ray SP PEF	Gamma Ray SP PEF	Mapped ID	Append Append Append	
		Click and Drag + Name DEPT AT10 AT20 AT30 AT30 AT60 AT90	vith the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE 4 AIT 2 FT. VE 5 AIT 2 FT. VE	ERT 10" DEPTH ERT 20" DEPTH ERT 20" DEPTH ERT 30" DEPTH	Units. M OHMM OHMM OHMM	Top 244.9068 Base 1553.8704 Step	Curve Layer ID Gamma Ray SP PEF Neutron Porosity	Gamma Ray SP PEF Neutron Porosity Density Porosity	Mapped ID	Append Append Append Append	
		Click and Drag & Name DEPT AT10 AT20 AT20 AT30 AT60	the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE 4 AIT 2 FT. VE 5 AIT 2 FT. VE 6 AIT 2 FT. VE	ENUTION Drag the col ERT 10" DEPTH ERT 20" DEPTH ERT 30" DEPTH ERT 60" DEPTH	Units. M OHMM OHMM OHMM OHMM OHMM	Top 244.9068 Base 1553.8704	Curve Layer ID Gamma Ray SP PEF Neutron Porosity Density Porosity	Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induc	Mapped ID	Append Append Append Append Append	
		Click and Drag + Name DEPT AT10 AT20 AT30 AT30 AT60 AT90	the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE 4 AIT 2 FT. VE 5 AIT 2 FT. VE 6 AIT 2 FT. VE	ERT 10" DEPTH ERT 20" DEPTH ERT 20" DEPTH ERT 30" DEPTH ERT 60" DEPTH ERT 90" DEPTH ERT 90" DEPTH	Units. M OHMM OHMM OHMM OHMM OHMM	Top 244.9068 Base 1553.8704 Step	Curve Layer ID Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induction Medium Induction	Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induc	Mapped ID	Append Append Append Append Append Append	
		Click and Drag + Name DEPT AT10 AT20 AT30 AT30 AT30 AT50 AT50 DT DT CAX	the Left Mouse Desc DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE 4 AIT 2 FT. VE 5 AIT 2 FT. VE 6 AIT 2 FT. VE 7 SONIC INTE 8 DENSITY C	E button. Drag the col ERT 10" DEPTH ERT 20" DEPTH ERT 30" DEPTH ERT 30" DEPTH ERT 90" DEPTH ERT 90" DEPTH ERVAL TRANSIT TIM ALIPER	Units. M OHMM OHMM OHMM OHMM IE US/M MM	Top [244.9068 Base [1553.8704 Step [0.1524	Curve Layer ID Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induction	Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induc Medium Induc	Mapped ID	Append Append Append Append Append Append Append	
		Click and Drag v Name DEPT AT10 AT20 AT20 AT30 AT50 AT50 DT CAX	with the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE 4 AIT 2 FT. VE 5 AIT 2 FT. VE 6 AIT 2 FT. VE 7 SONIC INTE 8 DENSITY C 9 NEUTRON	EBUITON. Drag the col ERT 10" DEPTH ERT 20" DEPTH ERT 30" DEPTH ERT 50" DEPTH ERT 60" DEPTH ERVAL TRANSIT TIN ALIPER CALIPER	Units. M OHMM OHMM OHMM OHMM IE US/M MM MM	Top 244.9068 Base 1553.8704 Step	Curve Layer ID Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induction Medium Induction	Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induc Medium Induc	Mapped ID	Append Append Append Append Append Append Append	
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		Cick and Drag v Name DEPT A Tab AT10 A AT20 A AT20 A AT30 A AT90 A AT90 CA A T90 CA A CA CA CA CA CA CA CA CA CA CA CA CA CA C	With the Left Mouse Desc 1 DEPTH 2 AIT 2 FT. VE 3 AIT 2 FT. VE 3 AIT 2 FT. VE 6 AIT 2 FT. VE 6 AIT 2 FT. VE 6 AIT 2 FT. VE 8 DENSITY C 9 NEUTRON 1 10 DENSITY C 11 BULK DEN 12 CNFD GAM 13 MICR0 INN 14 MICR0 FO 15 MICR0 NO 16 DENSITY 1 17 PHOTO ELL 18 NEUTRON	ENUTION. Drag the col ERT 10" DEPTH ERT 20" DEPTH ERT 30" DEPTH ERT 30" DEPTH ERT 90"	Units. M OHMM OHMM OHMM OHMM HE US/M MM K/M3 K/M3 K/M3 K/M3 K/M3 K/M3 K/M3	Top [244.9068 Base [1553.8704 Step [0.1524	Curve Layer ID Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induction Medium Induction	Gamma Ray SP PEF Neutron Porosity Density Porosity Shallow Induc Medium Induc	Mapped ID	Append Append Append Append Append Append Append	

3. On the lower left side of the window **Click and drag** the **curve** you wish to import to the **curve layer** on the lower right side and release it when the layer becomes highlighted.

N.B. The user can **Right click** on the **Curve Layer ID** to remove the mapping or switch the action from append to replace. The Symbol color will either be purple for replace or blue for append.

4. **Repeat** the **Clicking and Dragging of curves to curve layers** until all have been mapped. The user can also bring over new curves to the well without having a layer to show the curves on. You would then have to

associate that curve to a new layer at a later date. This would be done through the log configuration builder on adding a new curve layer.

				Choose Da	ata Type: Curves		
	epth Column: DEPT	▼	[[]	for 6-14			
	th the Left Mouse button. Drag the columns	1	rile over to the (-		E 1 41 10		1.4.12
Name	Desc 1 DEPTH	Units. M	Тор	Curve Layer ID Kamma Ray	Existing ID Gamma Ray	Mapped ID GR	Action Replace
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AT30	4 AIT 2 FT. VERT 30" DEPTH	OHMM	1553.8704	Neutron Porosity	Neutron Porosity	NPHI	Replace
AT60	5 AIT 2 FT. VERT 60" DEPTH	ОНММ	1333.0704	Density Porosity	Density Porosity	DPHI	Append
✓ ▲ AT90	6 AIT 2 FT. VERT 90" DEPTH	ОНММ	Step	Shallow Induction	Shallow Induction		Replace
	7 SONIC INTERVAL TRANSIT TIME	US/M	0.1524	Medium Induction	Medium Induction		Append
	8 DENSITY CALIPER	MM	,	Deep Induction	Deep Induction	AT90	Replace
	9 NEUTRON CALIPER	MM	Import	b cob marchier	b cop manonom		
	10 DENSITY CORRECTION	К/МЗ					
RHOB	11 BULK DENSITY	К/МЗ					
🗹 🚟 GR	12 CNFD GAMMA RAY	GAPI					
	13 MICRO INVERSE	онмм					
🗆 🎇 MFR	14 MICRO FOCUSSED RESISTIVITY	онмм					
🗆 🎇 MNOR	15 MICRO NORMAL	UNKN					
🗹 🎇 DPHI	16 DENSITY POROSITY (SANDSTO	W					
PEF	17 PHOTO ELECTRIC EFFECT						
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user can s	ave this mapping procedure	at this t	time by cli	cking on the 💾	File View	/ Help	
ton or click	on the File menu and Sele	ct the S	Save map	file option and	Open L	AS C	trl+0
na this proc	edure a file name and folder	r to be u	ised again	at a later date		: Well/Log	
	d have to import similar LAS				Open N		
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k on the	button. You will the	n ha nra	moted wit	h a system	Save M		
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	the Finished Incodution			OK L			a 4h a 💌
	the Finished Import messag or click on the File menu ar			bu	tton and the		

Import LAS curve data from a mapped file.

5.

6.

7.

 With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

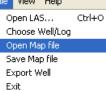
File Connect Disconnect Access Registration				
New Ctrl+N Open Ctrl+O Close	-		Open Look in: 🗁 DEMO	<mark>? ∑ ?</mark> • ∎ ☆ ⊞•
Import / Export ASCII Export Backup	Import Log / Well Export Log / Well Import / Export LAS	LAS Import	Timperial Files To Calgary LAS Wrapped files photos	 410MATN1.LAS ExportData_LAS_ByDepth UAS 30a_Revised_2010.la Metric Horizontal Gamma F
Print Log Ctrl+P Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter	LAS Export	If 6-30 density porosity las If 12-16-81-11Cnw.las Image: The name: 410MAIN1.LAS	Ø t2.las Ø test1.las ♪ Open
Exit Survey Viewer	Import MDT Import Slide Rotate		Files of type: LAS (*.las)	Cancel
	Export INI Settings File Import INI Settings File			

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Dpen button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user has the option to **highlight** different **curve / log data** sets from the **tree list** on the left of the LAS Reader window.

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1	ersion ell	298.7040	7.2817		8.3759	9.1755	9.2860	327.2000	236,9500	200.2250
	g_parameter	298.8564	7.9037		9.0163	9.8771	10.0053	325.5600	238,4000	197.4000
	g_definition	299.0088	8.8355		9.9961	10.9908	11.1643	322.6800	238,4000	195.3000
	rilling_definition	299.1612	9.3806		10.5738	11.5726	11.7660	318.5200	239,4500	193.1750
	rilling_data	299.3136 299.4660	9.5286 9.2263		10.7011 10.3808	11.5832 11.1335	11.7769 11.3300	317.4400 318.9200	240.1000 241.3000	191,4250 190,0000
	pre_definition	299.6184	9.2203		9.9410	10.6128	10.7902	320.2400	241.3000	186.4750
	pre_data	299.7708	8.6902		9.8136	10.5155	10.6814	321.7200	241.9250	178.7250
	clinometry_definition	299.9232	8.7787		9.8589	10.5933	10.7704	323.2800	242.7250	170.6000
	clinometry_data	300.0756	8.8192		9.7956	10.6226	10.8002	326.1200	243.0250	167.0750
	est_definition	300.2280	8 8316	9.1671	9.4936	10.4095	10.5835	330.0000	244.2500	166.7250
	est_data									
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	erforations_definition	ſ								
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🔶 lo	g_data	Curve	Depth Column:	DEFI	2	1				
\		Click and Drag v	vith the Left Mou	ise button. Drag the coli	umns of the dat	a file over to the	corresponding field			
\backslash		Name	Desc		Units.	Top	Curve Layer ID	Existing ID	Mapped ID	Action
\mathbf{i}		DEPT	1 DEPTH		м	- Top	Gamma Ray	Gamma Ray		Append
		□ AT10	2 AIT 2 FT	VERT 10" DEPTH	OHMM	244.9068	SP	SP		Append
		AT20		VERT 20" DEPTH	OHMM	Base	PEF	PEF		Append
		AT30		VERT 30" DEPTH	OHMM	1553.8704	Neutron Porosity	Neutron Porosity		Append
		AT60		VERT 60" DEPTH	OHMM	1	Bensity Porosity	Density Porosity		Append
		AT90		VERT 90" DEPTH	OHMM	Step	Shallow Induction	Shallow Induc		Append
				TERVAL TRANSIT TIM		0.1524	Medium Induction	Medium Induc		Append
		CAX	8 DENSITY		MM	1	Deep Induction	Deep Induction		Append
			9 NEUTRO		MM	<u>Import</u>	Bill Deep Induction	Deep muucion		Append
						Tubou				
				Y CORRECTION	K/M3					
			11 BULK DI		K/M3					
			12 CNFD G		GAPI					
			13 MICRO I		OHMM					
		MFR		OCUSSED RESISTIVI						
		MNOR	15 MICRO N		UNKN					
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CT UD	en Map file, (under the i	rne mer	iu selection	ir you w	oula like	to open a	Fi	e View	Help

the **Toolbar**. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.



3.

N.B. The file extensions are *.cvm for curve data, *.ftm for formation data, *.sgc for survey group data, *.inc for survey data, *.cdm for core data, *.tgc for DST job data, *.tmf for DST interval data *.sdm for sample descriptions and *.cdm for Core Description data.

Open Curve	Mapping File		? 🛛
Look in: 隘	DEMO	• • •	* 📰 •
🛅 Jen for Ca			
bob las.cv fred.cvm	m		
File name:	bob las.cvm		Open
Files of type:	Curve Mapping files (*.cvm)	•	Cancel

4. Select the mapping file with the *.cvm saved from previous imports of similar data to similar logs and click on the **Open** button.

N.B. The user can **Right click** on the **Curve Layer ID** to remove the mapping or switch the action from append to replace.

- 5. The user can map more curves on the left side of the window **by clicking and dragging** the **curve** you wish to import to the **curve layer** on the right side and release it when the layer becomes highlighted.
- 6. **Click** on the **button**. You will then be prompted with a system message after the import has finished.



Acknowledge the Finished Import message. Click on the button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Importing / Mapping of LAS Formation Top data.

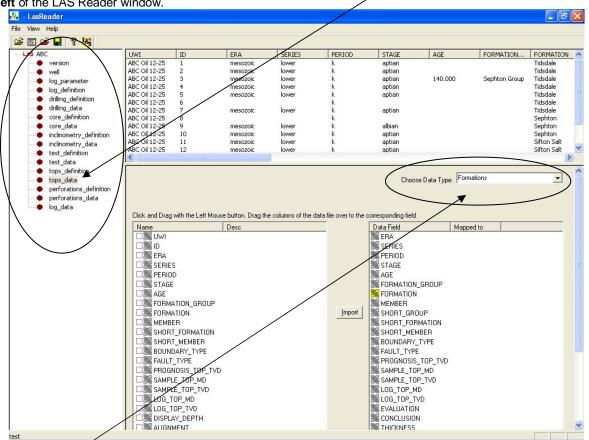
1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

Disconnect Access Registration	•					
New	Ctrl+N				Open	?
Open Close	Ctrl+0				Look in: 🗀 DEMO	- 🖬 🏝 -
Import / Export	Þ	Import Log / Well			imperial Files	410MAIN1.LAS
ASCII Export	•	Export Log / Well			LAS Wrapped files	LAS 30a Revised 2010.
Backup		Import / Export LAS	•	LAS Import	Chohotos	Metric Horizontal Gamma
Print Log Print Morning Report	Ctrl+P	Import Surveys Export Surveys Import AGS Data		LAS Export	 6-30 density porosity.las 12-16-81-11Cnw.las 	Ø]t2.lasØ]test1.las
Print Well End Report		Import Core Data			<	2
Print Reports to Word® Print Setup		ASCII Import Import Dip Meter			File name: 410MAIN1.LAS	Open
Exit		Import MDT			Files of type: LAS (*.las)	Cancel
Survey Viewer		Import Slide Rotate				
Survey viewer		Export INI Settings File				

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the

button. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user must **highlight the Formation Top data set** from the **tree list on the left** of the LAS Reader window.



- 3. Select Formations from the Choose Data type drop box.
- 4. On the lower left side of the window click and drag the Formation top data you wish to import to the formation data type field on the lower right side and release it when the data field becomes highlighted. Mandatory fields are highlighted in a yellow symbol R and must be mapped for the record to exist in the database.

N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

 Repeat the Clicking and Dragging of LAS field data to the data fields of the database table for formation tops until all have been mapped.

				Choose Data Type	e: Formations
Click and Drag with the Left I	/louse button. Dr	ag the columns of the da	ta file over to the	corresponding field	
Name	Desc	Units.		Data Field	Mapped to
				ERA	ERA
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🗹 🌺 ERA				PERIOD	PERIOD
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SHORT_MEMBER				BOUNDARY_TYPE	BOUNDARY
BOUNDARY_TYPE				FAULT_TYPE	
E RAULT_TYPE				PROGNOSIS_TOP_TVD	PROGNOSIS
PROGNOSIS_TOP_	Τ			SAMPLE_TOP_MD	SAMPLE_TO
SAMPLE_TOP_MD				SAMPLE_TOP_TVD	SAMPLE_TO
SAMPLE_TOP_TVD				LOG_TOP_MD	LOG_TOP_MD
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🗆 🎆 DISPLAY_DEPTH					CONCLUSION
ALIGNMENT				THICKNESS	THICKNESS
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user can save this	manning n	rocedure at this	time by clic	king on the	File View Help
on or click on the			•	-	Open LAS Ctrl+O
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sage after the imp	ort has finis	ined.			Exit
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nowledge the Fini				ОК	and then click on the

Import LAS Formation Tops data with a Mapped file.

6.

7.

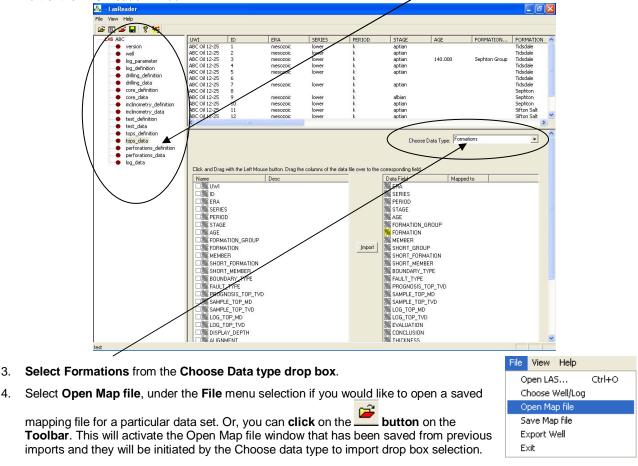
8.

 With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

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ASCII Export	•	Export Log / Well		LAS Wrapped files	LAS 30a_Revised_2010.la
Backup		Import / Export LAS 🔸	LAS Import	photos	📝 Metric Horizontal Gamma F
Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Ctrl+P	Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter	LAS Export	Ø 6-30 density porosity.las Ø 12-16-81-11Cnw.las File name: 410MAIN1.LAS	(2) las (2) test1.las (2) Dpen
Exit Survey Viewer		Import MDT Import Slide Rotate		Files of type: LAS (".las)	Cancel
		Export INI Settings File Import INI Settings File			

This will then activate the Open window which allows the user to select the LAS file you wish to import the data 2.

Open from. Find the file and directory and highlight the file by click on it once and then click on the button. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user must highlight the Formation Top data set from the tree list on the left of the LAS Reader window.



N.B. The file extensions are *.cvm for curve data, *.ftm for formation data, *.sgc for survey group data, *.inc for survey data, *.cdm for core data, *.tgc for DST job data, and *.tmf for DST interval data.

4.

Open Form	ation Top Mapping File		? 🛛
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imperial Fi Jen for Ca LAS Wrapp photos	lgary bed files		
File name:	formation tops.ftm		Open
Files of type:	Formation Top Map files (*.ftm)	•	Cancel

5. Select the mapping file with the *.ftm saved from previous imports of similar data to the database and click on the **Open** button.

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

- 6. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
- 7. **Click** on the **button**. You will then be prompted with a system message after the import has finished.

Databas	e Message 🛛 🔀
(į)	Imported Successfully.
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Acknowledge the Finished Import message. Click on the button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Importing / Mapping of LAS Inclinometry (Group) data.

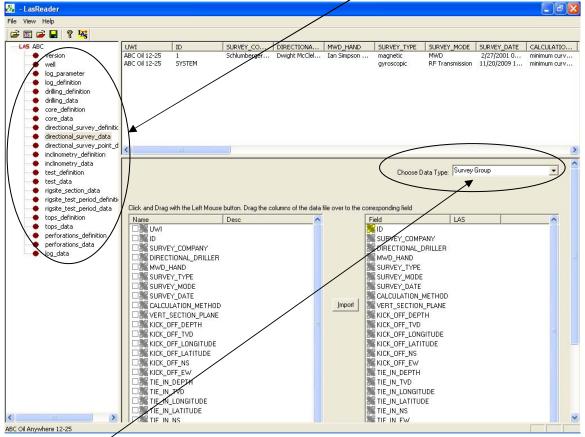
1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

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Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup		Import / Export LAS Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter	•	LAS Export	photos photos f-30 density porosity.las 12-16-81-11Cnw.las File name: 410MAIN1.LAS File name: 4400MAIN1.LAS	Metric Horizontal Gamma f Den Test1.las Den Cancel
Exit Survey Viewer		Import MDT Import Slide Rotate			Files of type: LAS (*.las)	Cancel
		Export INI Settings File Import INI Settings File				

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **logen button**. If your log is open at the time you will see something similar to the window shown below. We will default

to the importing of Curve data. The user must **highlight the Survey group data set** from the **tree list on the left** of the LAS Reader window.



- 3. Select Survey Group from the Choose Data type drop box.
- 4. On the lower left side of the window **click and drag** the **Survey group data** you wish to import to the **survey group data type field** on the lower right side and release it when the data field becomes highlighted. Mandatory fields are highlighted in a yellow symbol symbol and must be mapped for the record to exist in the database.

N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

5. **Repeat** the **Clicking and Dragging** of LAS field data to the data fields of the database table for the survey data until all have been mapped.

Name	Desc	~	Field	LAS	
KICK_OFF_TVD			KICK_OFF_TVD	KICK_OFF_TVD	
KICK_OFF_LON			KICK_OFF_LONGITUDI		
KICK OFF LAT			KICK_OFF_LATITUDE	KICK OFF LA	
KICK_OFF_NS			KICK_OFF_NS	KICK_OFF_NS	
KICK OFF EW			KICK_OFF_EW	KICK OFF EW	
Z 🕌 TIE_IN_DEPTH			TIE_IN_DEPTH	TIE_IN_DEPTH	
Z K TIE_IN_TVD			TIE_IN_TVD	TIE_IN_TVD	
Z 🧱 TIE_IN_LONGI	TUDE		, TIE_IN_LONGITUDE	TIE_IN_LON	
🛛 🧱 TIE_IN_LATITU	IDE	Impo	rt 🛛 🔀 TIE_IN_LATITUDE	TIE_IN_LATI	
Z K TIE_IN_NS			TIE_IN_NS	TIE_IN_NS	
Z 🧱 TIE_IN_EW			TIE_IN_EW	TIE_IN_EW	
🛛 🎇 REMARK			REMARK	REMARK	
Z 🧱 KICKOFF_INC 🛛			KICKOFF_INC	KICKOFF_INC	
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🛛 🚾 TIFIN IN			TIFIN N	TIFIN N	

6. The user can save this mapping procedure at this time by clicking on the button or click on the File menu and Select the Save map file option and giving this procedure a file name and folder to be used again at a later date when you would have to import similar LAS Inclinometry data (survey data) again.

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7. Click on the **button**. You will then be prompted with a system message after the import has finished.



Acknowledge the Finished Import message. Click on the button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Import LAS Survey Group data with a Mapped file.

1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

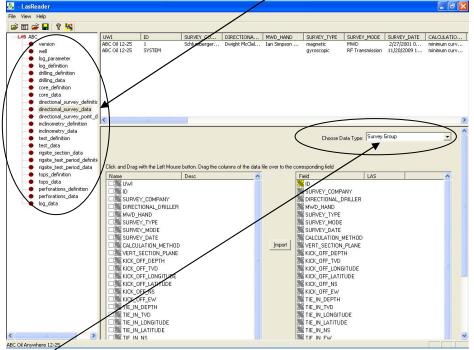
simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

Connect Disconnect					
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Import / Export ASCII Export Backup	۲ ۲	Import Log / Well Export Log / Well Import / Export LAS •	LAS Import	Timperial Files Tor Calgary LAS Wrapped files photos	410MAIN1.LAS ExportData_LAS_ByDept LAS 30a_Revised_2010.k Metric Horizontal Gamma
Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Ctrl+P	Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter	LAS Export	Image: Second state sta	12.las 12 testi.las
Exit Survey Viewer		Import MDT Import Slide Rotate		Files of type: LAS (*.las)	▼ Cancel
		Export INI Settings File Import INI Settings File			

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **button**. If your log is open at the time you will see something similar to the window shown below. We will default

to the importing of Curve data. The user must **highlight the Inclinometry data set** from the **tree list on the left** of the LAS Reader window.



- 3. Select Surveys Group from the Choose Data type drop box.
- 4. Select Open Map file, under the File menu selection if you would like to open a saved mapping file for a

particular data set. Or, you can **click** on the **button** on the **Toolbar**. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.

Help	Open Incline	metry Group Mapping File		<u>?</u>
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	Directional	Plus.sgc		
	File name:	Directional Plus.sgc		Open
	Files of type:	Inclinometry Group Map files (*.sgc)	•	Cancel

5. Select the mapping file with the *.sgc saved from previous imports of similar data to the database and click on the uppen button.

N.B. The user can **Right click** on the Data field to remove the mapping.

- 6. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
- 7. **Click** on the **button**. You will then be prompted with a system message after the import has finished.

Database	Message 🛛 🔀
(į)	Imported Successfully.
[ОК

8. Acknowledge the Finished Import message. Click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Importing / Mapping of LAS Inclinometry (survey) data.

 With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

File	,	,		
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Import / Export ASCII Export Backup	Import Log / Well Export Log / Well Import / Export LAS >	LAS Import	LAS Wrapped files photos 6-30 density porosity.las	 LAS 30a_Revised_2010.la Metric Horizontal Gamma F 12.las
Print Log Ctrl+P Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter	LAS Export	I2-16-81-11Cnw.las III File name: 410MAIN1.LAS Files of type: LAS (*,las)	
Exit Survey Viewer	Import MDT Import Slide Rotate Export INI Settings File Import INI Settings File			

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Dpen button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user must **highlight the Inclinometry data set** from the **tree list on the left** of the LAS Reader window.

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	log_parameter	ABC Oil 12-25 1 164.00080	164.00000	.22	25	1.800000	324.900000	2.890000
	log definition	ABC Oil 12-25 1 182,50000	182.44000	1.49	75	6.780000	341.800000	8.250000
	 drilling definition 	ABC Oil 12-25 1 201.50000	201.18000	4.45	-1.72	12.080000	341.900000	8.370000
	drilling data	ABC Oil 12-25 1 218.70000	217.83000	8.54 14.59	-2.94 -4.78	16.650000	344,400000	8.040000
	core definition	ABC Oil 12-25 1 238.40000 ABC Oil 12-25 1 257.40000	236.49000 253.97000	21.60	-4.78	20.820000 25.240000	342.100000 339.500000	6.450000 7.160000
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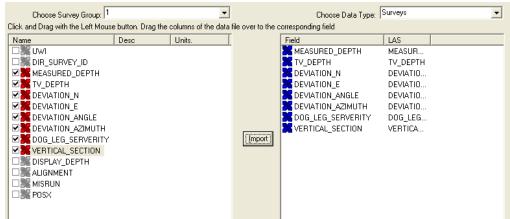
- 3. Select Surveys from the Choose Data type drop box.
- 4. Select the survey group you wish to import the data into from the Choose Survey group drop box

5. On the lower left side of the window **click and drag** the **Survey data** you wish to import to the **survey data type field** on the lower right side and release it when the data field becomes highlighted. Mandatory fields are

highlighted in a yellow symbol 3 and must be mapped for the record to exist in the database.

N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

 Repeat the Clicking and Dragging of LAS field data to the data fields of the database table for the survey data until all have been mapped.



7. The user can save this mapping procedure at this time by clicking on the button or click on the File menu and Select the Save map file option and giving this procedure a file name and folder to be used again at a later date when you would have to import similar LAS Inclinometry data (survey data) again.

File	View	Help	
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Sa	ave Maj	p file	
E:	kport W	/ell	
E	kit		

8. **Click** on the **button**. You will then be prompted with a system message after the import has finished.

Databas	e Message 🛛 🔀
(į)	Imported Successfully.
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	-

Acknowledge the Finished Import message. Click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Import LAS Inclinometry data with a Mapped file.

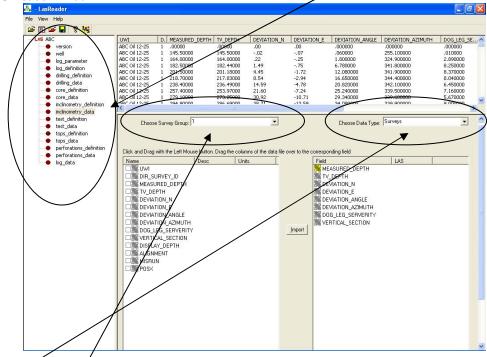
1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

Connect Disconnect Access Registration	•			Орел	?
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Import / Export ASCII Export) F	Import Log / Well Export Log / Well	LAC Incont	Jen for Calgary LAS Wrapped files photos So departmentation lab	ExportData_LAS_ByD LAS 30a_Revised_201 Metric Horizontal Gam d) t2.las
Backup Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Ctrl+P	Import / Export LAS Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import	LAS Import LAS Export	If 6-30 density porosity.las If 12-16-81-11Cnw.las File name: 410MAIN1.LAS Files of type: LAS (*.las)	
Exit Survey Viewer		Import Dip Meter Import MDT Import Slide Rotate			
		Export INI Settings File Import INI Settings File			

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

Open from. Find the file and directory and highlight the file by click on it once and then click on the button. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user must highlight the Inclinometry data set from the tree list on the left of the LAS Reader window.



- Select Surveys from the Choose Data type drop box. 3.
- Select the survey group you wish to import the data into from the Choose Survey group drop box 4.
- 5. Select Open Map file, under the File menu selection if you would like to open a saved mapping file for a

particular data set. Or, you can click on the E button on the Toolbar. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.

Tile Ulem Ulele	Open Inclinometry Mapping File	? 🗙
File View Help Open LAS Ctrl+O Choose Well/Log Open Map file Save Map file Export Well Exit	Look in: DEMD Imperial Files Jen for Calgary LAS Wraped files photos INCLINOMETRY.inc) 📸 🎟 -
	File name: survey mapping file.inc Files of type: Inclinometry Map files (".inc)	Open Cancel

6. **Select** the mapping file with the ***.inc** saved from previous imports of similar data to the database and **click** on the **Dpen button**.

N.B. The user can **Right click** on the Data field to remove the mapping.

- 7. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
- 8. Click on the **button**. You will then be prompted with a system message after the import has finished.

Database Messag	e 🔀
i Imported	Successfully.
ОК	
	OK

Acknowledge the Finished Import message. Click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Importing / Mapping of Core data.

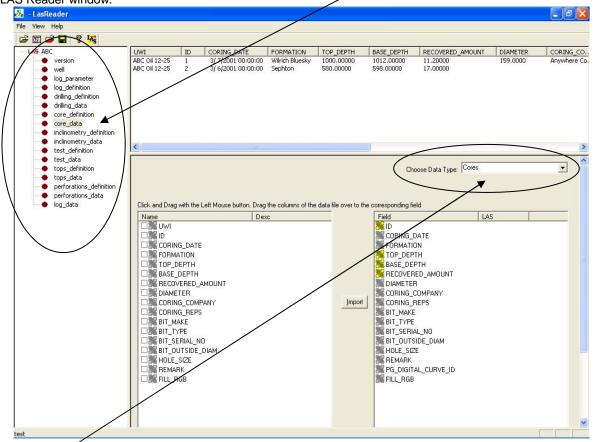
1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

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Print Log	Ctrl+P	Export Surveys	- L	•	12-16-81-		test1.las	
Print Morning Report		Import AGS Data					_	
Print Well End Report		Import Core Data			<			>
Print Reports to Word® Print Setup		ASCII Import			File name:	410MAIN1.LAS		Open
Frinc Secup		Import Dip Meter				, 		
Exit		Import MDT			Files of type:	LAS (*.las)	<u> </u>	Cancel
Survey Viewer		Import Slide Rotate						
		Export INI Settings File						
		Import INI Settings File						

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **button**. If your log is open at the time you will see something similar to the window shown below. We will default



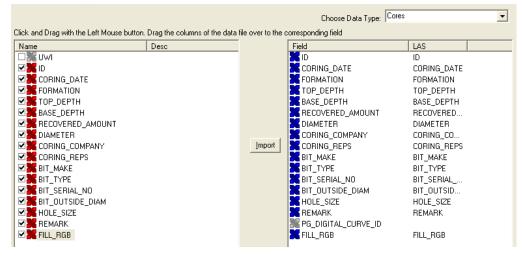
to the importing of Curve data. The user must **highlight the Core data set** from the **tree list on the left** of the LAS Reader window.

- 3. Select Cores from the Choose Data type drop box.
- 4. On the lower left side of the window **click and drag** the **Core data** you wish to import to the **core data type field** on the lower right side and release it when the data field becomes highlighted. Mandatory fields are highlighted

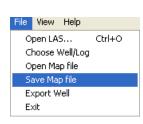
in a yellow symbol 🊟 and must be mapped for the record to exist in the database.

N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

 Repeat the Clicking and Dragging of LAS field data to the data fields of the database table for the core data until all have been mapped.



6. The user can save this mapping procedure at this time by clicking on the button or click on the File menu and Select the Save map file option and giving this procedure a file name and folder to be used again at a later date when you would have to import similar LAS Core data again.



Click on the <u>button</u>. You will then be prompted with a system message after the import has finished.

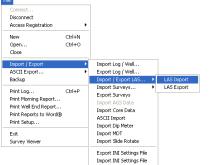


Acknowledge the Finished Import message. Click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Import LAS Core data with a Mapped file.

1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

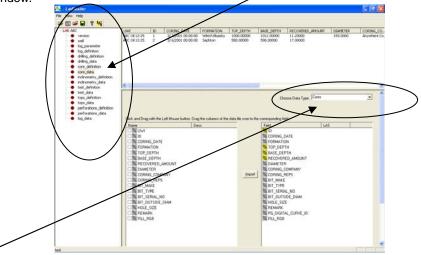
simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.



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<	<u>></u>
File name: 410MAIN1.LAS	Open
Files of type: LAS (*.las)	Cancel

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the

data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user must **highlight the core data set** from the **tree list on the left** of the LAS Reader window.



3. Select Cores from the Choose Data type drop box.

4. Select Open Map file, under the File menu selection if you would like to open a saved mapping file for a

particular data set. Or, you can **click** on the **button** on the **Toolbar**. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.

File View Help	Open Core Mapping File	? 🛛
Open LAS Ctrl+O Choose Well/Log Open Map file Save Map file Export Well Exit	Look in: DEMO Imperial Files Jen for Calgary LAS Wrapped files photos agat mapping file.cdm core labs mapping file.cdm morwest albian.cdm morwest mapping file.cdm morwest mapping file.cdm m	<mark>☆</mark> ≣-
	File name: core data.cdm Files of type: Core Map files (".cdm)	Open Cancel

5. Select the mapping file with the *.cdm saved from previous imports of similar data to the database and click on the open button.

N.B. The user can **Right click** on the Data field to remove the mapping.

- 6. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
- 7. **Click** on the **button**. You will then be prompted with a system message after the import has finished.



8. Acknowledge the Finished Import message. Click on the **button** and then click on the **button** to exit or click on the **File menu** and select the Exit option to close the LAS Reader Window.

Importing / Mapping of Drill Stem Test (DST) data.

1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

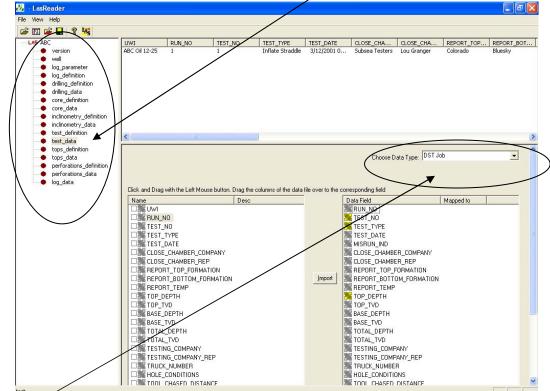
simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

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Import / Export ASCII Export	Ì	Import Log / Well Export Log / Well]
Backup Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup Exit Survey Viewer	Ctrl+P	Import / Export LAS Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter Import MDT Import Slide Rotate	•	LAS Import LAS Export
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<	>
File name: 410MAIN1.LAS	Open
Files of type: LAS (*.las)	Cancel

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user must **highlight the DST data set** from the **tree list on the left** of the LAS Reader window.



- 3. Select DST Job from the Choose Data type drop box.
- 4. On the lower left side of the window **click and drag** the **DST data** you wish to import to the **core data type field** on the lower right side and release it when the data field becomes highlighted. Mandatory fields are highlighted in a yellow symbol **s** and must be mapped for the record to exist in the database.

N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

5. **Repeat** the **Clicking and Dragging** of LAS field data to the data fields of the database table for the DST data until all have been mapped.

			Choose Data Type: DST Jo	b 💌
Click and Drag with the Left Mouse button. I	Drag the columns of the data	file over to the c	orresponding field	
Name	Desc		Data Field	Mapped to
			🔀 RUN_NO	RUN_NO
RUN_NO			K TEST_NO	TEST_NO
✓ X TEST_NO			TEST_TYPE	TEST_TYPE
✓ X TEST_TYPE			K TEST_DATE	TEST_DATE
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CLOSE_CHAMBER_REP			CLOSE_CHAMBER_REP	CLOSE_CHA
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🕅 🚾 TOOL CHASED DISTANCE			TOOL CHASED DISTANCE	TOOL CHAS

- 6. The user can save this mapping procedure at this time by clicking on the button or click on the File menu and Select the Save map file option and giving this procedure a file name and folder to be used again at a later date when you would have to import similar LAS DST data again.
- 7. Click on the **button**. You will then be prompted with a system message after the import has finished.



File View Help Open LAS... Ctrl+O Choose Well/Log Open Map file Save Map file Export Well Exit

8. Acknowledge the Finished Import message. Click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

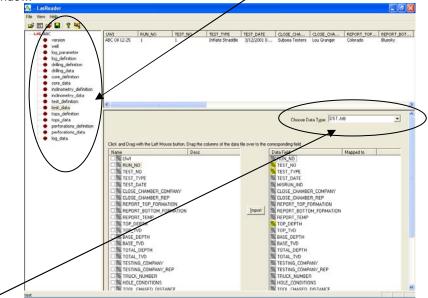
Import LAS Drill Stem Test data with a Mapped file.

1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

simply click on the LAS button, on the Toolbar, to activate the LAS Reader window. Disconnect **?** X Access Registration Open New Ctrl+N Look in: 🗀 DEMO 💌 듣 🗈 🚽 💌 Open.. Ctrl+O Close 🔁 Imperial Files 410MAIN1.LAS Import Log / Well. 🛅 Jen for Calgary ExportData LAS ByDepth ASCII Export. Export Log / Well. LAS Wrapped files LAS 30a_Revised_2010.la Backup ort / Export LA 🚞 photos 🕑 Metric Horizontal Gamma F LAS Export Import Surveys.. Print Log. Ctrl+P 6-30 density porosity.las t2.las Export Surveys Print Morning Report.. 🕑 12-16-81-11Cnw.las 🕑 test1.las Print Well End Report.. Import Core Data Print Reports to Word® ASCII Import < > Print Setup... Import Dip Meter Import MDT Evit File name: 410MAIN1.LAS Open Import Slide Rotate Survey Viewer Cancel LAS (*.las) Files of type: Export INI Settings File • Import INI Settings File

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user must **highlight the core data set** from the **tree list on the left** of the LAS Reader window.



3. Select DST Job from the Choose Data type drop box.

4. Select Open Map file, under the File menu selection if you would like to open a saved mapping file for a

particular data set. Or, you can **click** on the **button** on the **Toolbar**. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.

	Open DST Job Mapping File ? 🛛
File View Help Open LAS Ctrl+O Choose Well/Log Open Map file Save Map file Export Well Exit	Look in: DEMO The control of the co
	File name: wireline test tgc Open
	Files of type: DST Job Map files (*.tgc) 🗨 Cancel

5. Select the mapping file with the *.tgc saved from previous imports of similar data to the database and click on the uppen button.

N.B. The user can **Right click** on the Data field to remove the mapping.

- 6. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
- 7. Click on the **button**. You will then be prompted with a system message after the import has finished.



Acknowledge the Finished Import message. Click on the button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Import / Map - Drill Stem Test (DST) period data.

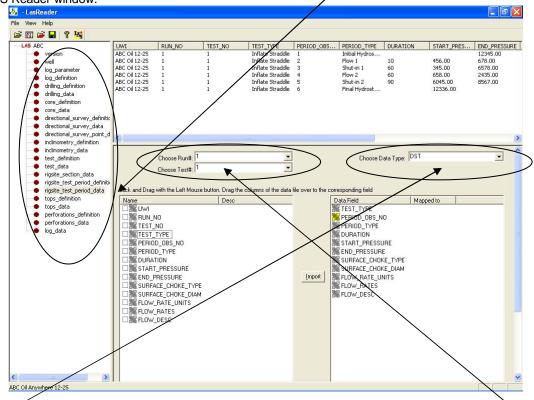
1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

File Connect Disconnect Access Registration	۲.				
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Print Log Print Morning Report Print Well End Report Print Reports to Word®	Ctrl+P	Import Surveys Export Surveys Import AGS Data Import Core Data	LAS Export	If 6-30 density porosity.las If 2-16-81-11Cnw.las	Image: state of the state of th
Print Setup		ASCII Import Import Dip Meter		File name: 410MAIN1.LAS	Open
Exit Survey Viewer		Import MDT Import Slide Rotate		Files of type: LAS (*.las)	Cancel
		Export INI Settings File Import INI Settings File			

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. The user must **highlight the DST period data set** from the **tree list on the left** of the LAS Reader window.



- 3. Select DST from the Choose Data type drop box.
- 4. If the Data has the Test Run # and the Test # we can map those over. If not then we have to **choose the** Test **Run** # and the Test # from their respective drop boxes.
- 5. On the lower left side of the window **click and drag** the **DST data** you wish to import to the **core data type field** on the lower right side and release it when the data field becomes highlighted. Mandatory fields are highlighted in a vellow symbol **3** and must be mapped for the record to exist in the database.

N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

6. **Repeat** the **Clicking and Dragging** of LAS field data to the data fields of the database table for the DST data until all have been mapped.

Choose Run#: 1 Choose Test#: 1	• •		Choose Data Type:	DST	•
Click and Drag with the Left Mouse butto	n. Drag the columns of the data	file over to the o	corresponding field		
Name	Desc		Data Field	Mapped to	
			TEST_TYPE	TEST_TYPE	
🗆 🎇 RUN_NO			RERIOD_OBS_NO	PERIOD_OBS	
EST_NO			RERIOD_TYPE	PERIOD_TYPE	
✓ K TEST_TYPE			X DURATION	DURATION	
✓ K PERIOD_OBS_NO			START_PRESSURE	START_PRE	
RERIOD_TYPE			KEND_PRESSURE	END_PRESS	
🗹 🎇 DURATION			SURFACE_CHOKE_TYPE	SURFACE_C	
START_PRESSURE			SURFACE_CHOKE_DIAM	SURFACE_C	
🗹 🎇 END_PRESSURE		[Import]	FLOW_RATE_UNITS	FLOW_RATE	
SURFACE_CHOKE_TYPE			KIOW_RATES	FLOW_RATES	
SURFACE_CHOKE_DIAM			FLOW_DESC	FLOW_DESC	
FLOW_RATE_UNITS					
FLOW_RATES					
FLOW_DESC					

. The user can save this mapping procedure at this time by clicking on the 7. button or click on the File menu and Select the Save map file option and giving this procedure a file name and folder to be used again at a later date when you would have to import similar LAS DST data again.

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Import **button**. You will then be prompted with a system Click on the 8. message after the import has finished.

Acknowledge the Finished Import message. Click on the

9.



- ΟK button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.
- Import LAS Drill Stem Test period data with a Mapped file.
- With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on 1. Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

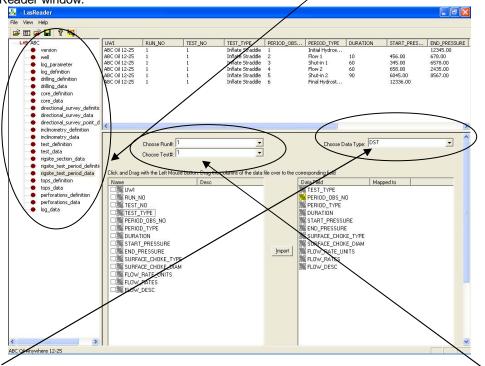
simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

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ASCII Export	•	Export Log / Well		LAS Wrapped files	LAS 30a_Revised_2010.
Backup		Import / Export LAS)	LAS Import	photos	Metric Horizontal Gamma
Print Log	Ctrl+P	Import Surveys	 LAS Export 	6-30 density porosity.las	🕑 t2.las
Print Morning Report	carri	Export Surveys		22-16-81-11Cnw.las	🕜 test1.las
Print Well End Report		Import AGS Data		<	>
Print Reports to Word®		Import Core Data ASCII Import			
Print Setup		Import Dip Meter		File name: 410MAIN1.LAS	Open
Exit		Import MDT		Files of type: LAS (*.las)	✓ Cancel
Survey Viewer		Import Slide Rotate		, , , , , , , , , , , , , , , , , , , ,	
		Export INI Settings File	-		
		Import INI Settings File			

This will then activate the Open window which allows the user to select the LAS file you wish to import the data 2. Open from. Find the file and directory and highlight the file by click on it once and then click on the

button. If your log is open at the time you will see something similar to the window shown below. We will default

3. to the importing of Curve data. The user must **highlight the DST period data set** from the **tree list on the left** of the LAS Reader window.



- 4. Select DST from the Choose Data type drop box.
- 5. If the Data has the Test Run # and the Test # we can map those over. If not then we have to **choose the Test Run # and the Test #** from their respective drop boxes.
- 6. Select Open Map file, under the File menu selection if you would like to open a saved mapping file for a

particular data set. Or, you can **click** on the **button** on the **Toolbar**. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.



7. Select the mapping file with the *.tmf saved from previous imports of similar data to the database and click on the uppen button.

N.B. The user can **Right click** on the Data field to remove the mapping.

- 8. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
- 9. Click on the **button**. You will then be prompted with a system message after the import has finished.



10. Acknowledge the Finished Import message. Click on the button button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Importing / Mapping of LAS Sample Description data.

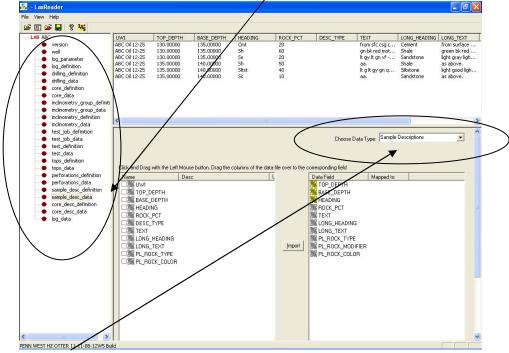
1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or



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Print Log Print Morning Report Print Well End Report Print Reports to Word®		Import Surveys Export Surveys Import AGS Data Import Core Data	LAS Export	Image: Construction of the second	Image: state of the state of t
Print Setup		ASCII Import Import Dip Meter		File name: 410MAIN1.LAS	Open
Exit Survey Viewer		Import MDT Import Slide Rotate		Files of type: LAS (*.las)	▼ Cancel
		Export INI Settings File			

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Deen button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. **Highlight the Sample Description data set** from the **tree list** on the left of the LAS Reader window.



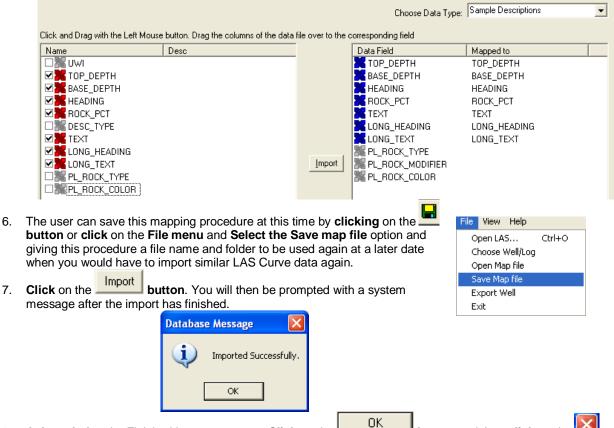
3. Select Sample Description from the Choose Data type drop box.

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4. On the lower left side of the window click and drag the Sample Description Data in the LAS file you wish to import to the sample description table data field on the lower right side and release it when the data field becomes highlighted.

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

 Repeat the Clicking and Dragging of the data to the database table until all the data has been mapped. The user can then use the Sample description report to manipulate the data or the Sample / Core description transfer option to place the description onto the log.



Acknowledge the Finished Import message. Click on the button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

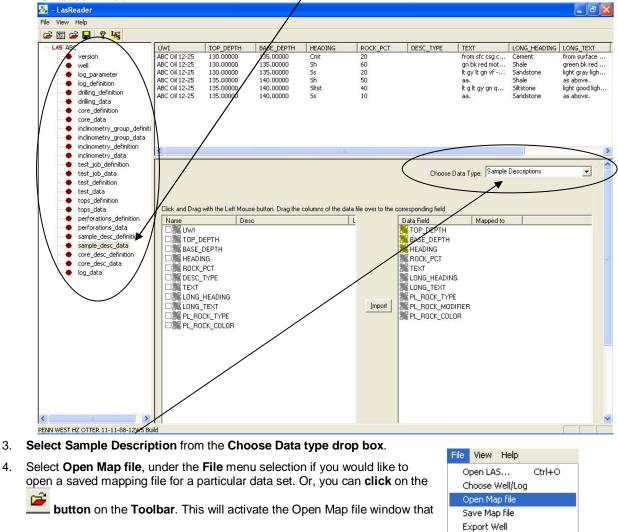
Import LAS Sample Description data from a mapped file.

 With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

File Connect Disconnect Access Registration	Þ				
	Ctrl+N			Open	? 🞽
	Ctrl+0			Look in: 🗀 DEMO	- ← 🗈 💣 💷 -
Close				,	
Import / Export	Þ	Import Log / Well		Dimperial Files	410MAIN1.LAS ExportData_LAS_ByDepth
ASCII Export	•	Export Log / Well		LAS Wrapped files	LAS 30a_Revised_2010.la
Backup		Import / Export LAS 🔸	LAS Import	Dephotos	📝 Metric Horizontal Gamma F
Print Log Print Morning Report Print Well End Report	Ctrl+P	Import Surveys Export Surveys Import AGS Data Import Core Data	LAS Export	 6-30 density porosity las 12-16-81-11Cnw.las 	i∰ t2.las i∰ test1.las
Print Reports to Word® Print Setup		ASCII Import Import Dip Meter		File name: 410MAIN1.LAS	Open
Exit Survey Viewer		Import MDT Import Slide Rotate		Files of type: LAS (*.las)	Cancel
		Export INI Settings File Import INI Settings File			

This will then activate the Open window which allows the user to select the LAS file you wish to import the data 2.

Open from. Find the file and directory and highlight the file by click on it once and then click on the button. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. Highlight the Sample Description data set from the tree list on the left of the LAS Reader window.



Exit

4.

has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.

N.B. The file extensions are ***.cvm** for curve data, ***.ftm** for formation data, ***.sgc** for survey group data, ***.inc** for survey data, ***.cdm** for core data, ***.tgc** for DST job data, ***.tmf** for DST interval data ***.sdm** for sample descriptions and ***.cdm** for Core Description data.

Open Samp	le Desc. Mapping File	? 🛛
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Imperial Fi Jen for Ca LAS Wrapp photos	lgary bed files	
File name:	trivsion.sdm	Open
Files of type:	Sample Desc. Mapping files (".sdm)	Cancel

5. Select the mapping file with the *.sdm saved from previous imports of similar data and click on the Open button.

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

- 6. The user can map more data on the left side of the window **by clicking and dragging** the **data type** you wish to import to the **data field** on the right side and release it when the field becomes highlighted.
- 7. Click on the **button**. You will then be prompted with a system message after the import has finished.



8. Acknowledge the Finished Import message. Click on the button button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

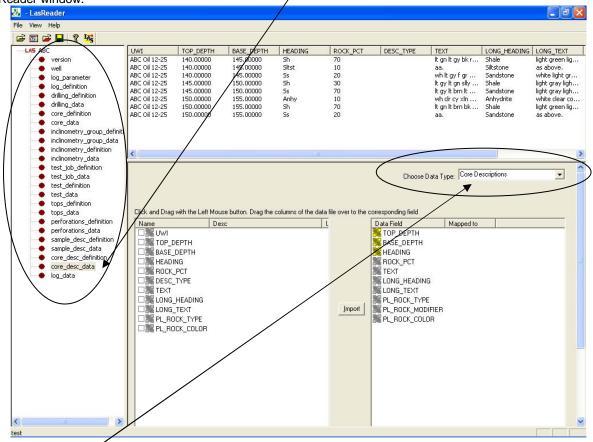
Importing / Mapping of LAS Core Description data.

1. With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or

File	,	,		
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Close			,	410MAIN1.LAS
Import / Export	Import Log / Well	7	imperial Files	ExportData_LAS_ByDepth
ASCII Export	 Export Log / Well 		LAS Wrapped files	LAS 30a_Revised_2010.la
Backup	Import / Export LAS 🕨	LAS Import	photos	📝 Metric Horizontal Gamma F
Print Log Ctrl+P Print Morning Report Print Well End Report Print Reports to Word® Print Setup Exit	 Import Surveys ▶ Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter Import MDT 	LAS Export	Image: Signal and Signal	() t2.las () test1.las () Dpen Cancel
Survey Viewer	Import Slide Rotate Export INI Settings File Import INI Settings File	-		

2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data

from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **button**. If your log is open at the time you will see something similar to the window shown below. We will default to the importing of Curve data. **Highlight the Core Description data set** from the **tree list** on the left of the LAS Reader window.



- 3. Select Core Description from the Choose Data type drop box.
- 4. On the lower left side of the window **click and drag** the **Core Description Data** in the LAS file you wish to import to the **core description table data field** on the lower right side and release it when the data field becomes highlighted.

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

5. **Repeat** the **Clicking and Dragging of the data to the database table** until all the data has been mapped. The user can then use the Sample description report to manipulate the data or the Sample / Core description transfer option to place the description onto the log.

Name	Desc	(L		Data Field	Mapped to	
UWI				TOP_DEPTH	TOP_DEPTH	
✓ TOP_DEPTH				BASE_DEPTH	BASE_DEPTH	
BASE_DEPTH				HEADING	HEADING	
Mathematical Heading				ROCK_PCT		
ROCK_PCT				TEXT	TEXT	
ESC_TYPE				LONG_HEADING	LONG_HEADING	
TEXT				LONG_TEXT	LONG_TEXT	
LONG_HEADING				PL_ROCK_TYPE		
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PL_ROCK_TYPE				ROCK_COLOR		
PL ROCK COLOR						
he user can save th					File View Help	Ctrl+O
he user can save th utton or click on the	e File menu an	d Select the S	ave map	file option and	Open LAS	Ctrl+O
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he user can save th utton or click on the ving this procedure hen you would have	e File menu an a file name and	d Select the S I folder to be u	ave map sed again	file option and at a later date	Open LAS Choose Well/Log Open Map file	
he user can save th utton or click on the ving this procedure	e File menu an a file name anc to import simila	d Select the S I folder to be us ar LAS Curve o	ave map sed again data again	file option and at a later date	Open LAS Choose Well/Log Open Map file Save Map file	
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he user can save th utton or click on the ving this procedure hen you would have	e File menu an a file name and to import simila button . You v	d Select the S I folder to be us ar LAS Curve of will then be prod.	ave map sed again data again	file option and at a later date	Open LAS Choose Well/Log Open Map file Save Map file	
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Import LAS Core Description data from a mapped file.

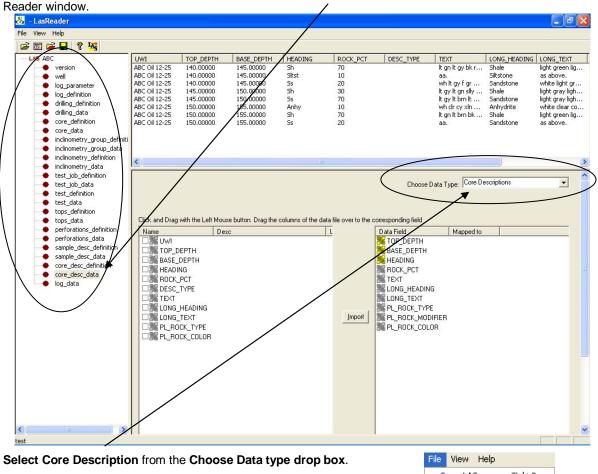
With your well open in Power*Log / Curve or Core Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS and then select LAS Import from the pop out-menu or 1.

simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

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Import / Export ASCII Export Backup	۲ ۲	Import Log / Well Export Log / Well Import / Export LAS	LAS Import	Timperial Files Totalgary LAS Wrapped files photos	#10MAIN1.LAS BEXportData_LAS_ByDepth LAS 30a_Revised_2010.la Metric Horizontal Gamma F
Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup Exit Survey Viewer		Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter Import Dip Meter Import MDT Import Slide Rotate	LAS Export	Ø 6-30 density porosity.las Ø 12-16-81-11Cnw.las Image: State of the state	
		Export INI Settings File Import INI Settings File			

This will then activate the Open window which allows the user to select the LAS file you wish to import the data 2.

Open from. Find the file and directory and highlight the file by click on it once and then click on the button. If your log is open at the time you will see something similar to the window shown below. We will default



to the importing of Curve data. Highlight the Core Description data set from the tree list on the left of the LAS

- Select Core Description from the Choose Data type drop box.
- 4. Select Open Map file, under the File menu selection if you would like to open a saved mapping file for a particular data set. Or, you can **click** on the

Open LAS... Ctrl+O Choose Well/Log Open Map file Save Map file Export Well Exit

Ē button on the Toolbar. This will activate the Open Map file window that has been saved from previous imports and they will be initiated by the Choose data type to import drop box selection.

N.B. The file extensions are *.cvm for curve data, *.ftm for formation data, *.sgc for survey group data, *.inc for survey data, *.cdm for core data, *.tgc for DST job data, *.tmf for DST interval data *.sdm for sample descriptions and *.cdm for Core Description data.

Open Core I	Desc. Mapping	g File	? 🛛
Look in: 隘	DEMO	▼ ← Ē) 💣 🎟 -
imperial Fi Jen for Ca LAS Wrapp photos agat mapp core data.	lgary bed files ing file.cdm	core labs mapping file.cdm norwest abian.cdm norwest mapping file.cdm trivision.cdm	
File name:	trivision.cdm		Open
Files of type:	Core Desc. Ma	pping files (*.cdm)	Cancel

Select the mapping file with the *.cdm saved from previous imports of similar data and click on the 5. Open button.

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

- 6. The user can map more data on the left side of the window **by clicking and dragging** the **data type** you wish to import to the **data field** on the right side and release it when the field becomes highlighted.
- 7. Click on the **button**. You will then be prompted with a system message after the import has finished.



Acknowledge the Finished Import message. Click on the button and then click on the button to exit or click on the File menu and select the Exit option to close the LAS Reader Window.

Export LAS Well Data and Curve Data

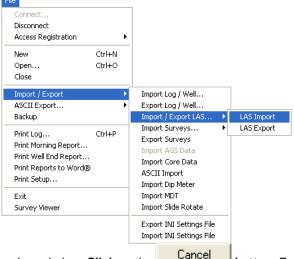
The Power*Suite LAS Import Utility program can also export LAS data for almost all of the table data as well as the export of Power*Suite curve data into an LAS V3.0 File.

How to Export an LAS File with Well Data and Curve Data

This allows the user to export all of the well's data in an LAS V3.0 data format. This will export every table from the database very similar to the Data transfer module but not in a binary format but in a format that is readable by an LAS reader.

1. Click on the File pull down menu selection and click on Import / Export and then click on Import / Export LAS

and then select LAS Import from the pop out-menu or simply click on the LAS button, on the Toolbar, to activate the LAS Reader window.

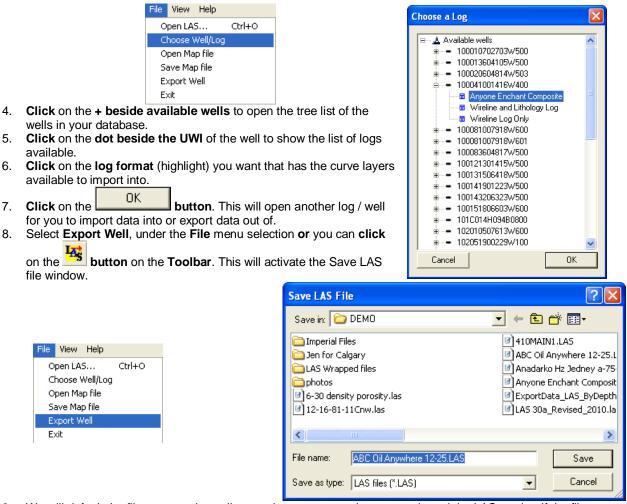


 This will then activate the Open Las window. Click on the time you will see a blank LAS Reader window.

button. Even if your log is open at the

3. If your well / log is open that you want to export data out of skip to step 8. If you want to export data for a different log / well you can then choose a different log / well by selecting Choose Well / Log, under the File menu selection if you would like to open a different Well / Log or you did not have a log open when the LAS

Reader Application was activated. Or, you can **click** on the **button** on the **Toolbar**. This will activate the Choose a log window



9. We will default the file name to the well name that was open when you activated the LAS reader. If the file name is OK then **click** on the **save button**. This will activate the Curve Export Options window

	activate the Curve Export Options window.
Curve Export Options	Curve Export Options
Export Interval	Export Interval
Step: 0.5 Check STEP	Step: 1 Check STEP
	*Uneven Depth Step
ОК	ОК

10. The user can modify the interval and the step if they so desire. The step may effect the curve data at the end of the file as they step may alter the final readings on an LAS file curve depths. We default to the best step available but the user can change the step and then **click** on the **Check STEP** button to verify the step is ok.

We take the first curve depth from the shallowest curve and the last curve depth from the deepest of the curves and modify the step so that all the data will have a common step.

11. **Click** on the **DK button** when you are done. This will activate a please wait window and when the window disappears the file has been created in the folder you have chosen.

Export LAS Curve Data Files

The Power*Suite LAS Export Utility program can be accessed through the Power*Suite folder and facilitates the export of Power*Suite curve data into an LAS File.

How to Export an LAS Curve Data File

1. Under the File menu selection, click on Import/Export, click on Import / Export LAS and then select LAS Import from the pop out menu. This will activate the LAS Export window.

File Connect Disconnect Access Registration New Ctrl+N Open Ctrl+O Close Import / Export Export Log / Well	<u> </u>
Connect Disconnect Access Registration ▲ New Ctrl+N Open Ctrl+O Close Import Log / Well Import Log / Well Export	ma
Disconnect Access Registration New Ctrl+N Open Ctrl+O Close Import / Export ASCII Export Fixport Log / Well Export Log / Well	///e
Access Registration	
Open Ctrl+O Close Import / Export ASCII Export Import Log / Well	
Open Ctrl+O Close Import / Export ASCII Export Import Log / Well	
Close Import / Export Import Log / Well ASCII Export Export Log / Well	
Import / Export Import Log / Well ASCII Export Export Log / Well	
ASCII Export Export Log / Well	
Backup Import / Export LAS LAS Import Import Surveys LAS Export	
Print Log Ctrl+P Import Surveys LAS Export To LAS File	
Print Morning Report Transit ACE Data	
Print Well End Report Import Core Data	
Print Reports to Word® ASCII Import	
Print Setup	
Evit Import MDT	
Survey Viewer Import Slide Rotate	
Depth Units STEP	
Export INI Settings File CMD C TVD C SSL Extrapolate C Curve Dept Import INI Settings File	hs
Import INL Sectings hie STEP Value: 1	
	xit

- 2. Click on the **Choose Well** button. This will activate a list of all the wells in your Database.
- 3. Select the well you wish to export your LAS Curve data for by **clicking on the well name** and then **clicking on**

the button or by double click on the well. You should now see your well name in the field

beside the **Lhoose Well** button. Also, you should see a list of curves in the **Curve List** field. An example of this is shown on the next page.

- 4. Click on the button and type in a file name and path for that file in the window. Click on the
 - **button** when you have done.
- 5. Select the Curves you wish to create a file for by **click on the curve name** in the Curve name field **or** by
 - clicking on the **button** to select all the curves.
- 6. Select the step type you wish to use for the export.

Extrapolate will give you the best incremental data utilizing a constant step extrapolating the data to replicate this constant step. The **Curve depths** selection will merge the curves (if more than one curve is selected) and will export the data as it has been collected into the database.

- 7. **Type** in an appropriate **step** (depth increment) or utilize the default 1 m depth increment.
- 8. **Optional** Type in an interval in the From and To fields and deselect the Extract Interval All check box if you wish to export just a portion of the curve data.
- 9. **Optional** If the user wishes to Change Null Value.

a.	Click on the	Set NULL Value	button.	. This will activate a Null Value window.	
----	--------------	----------------	---------	---	--

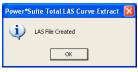
Enter LAS Header in 🔀						
Well block Null Value: -999.25						
OK Cancel						

- b. Type in another Null value if the default null value of –999.25 is not what you want for a null value and then **click** on the **DK button**.
- 10. Optional Select the reverse direction check box if you want the data in descending order.
- 11. **Optional** Select the depth unit values other than (MD) Measured Depth (default). Click on either radio button Eside the other such selections as (TVD) True Vertical Depth or (SSL) Subsea Level.

Total LAS Curve Export	×
From Well Choose Well: Jasper Spirit River	Curves List All None
Well Description Storage Unit: Well Name : Jasper Spirit River Location : 7-26-77-7W6 Country : Canada Province / State : Alberta UWI : 100102607707W600 Licensee : Anadarko Canada Corporation Field : Spirit River Direction : Vertical	C1 (METHANE). ppm C2 (ETHANE). ppm C3 (PROPANE). ppm DRILL RATE. MIN/M Gamma Ray. gapi GR. API IC4 (ISO BUTANE). ppm IC5 (ISO PENTANE). ppm NC4 (NORMAL BUTANE). ppm NC5 (NORMAL PENTANE). ppm TOTAL GAS. UNITS
To LAS File Choose File:	Create File
Extract Options Image: total contract Image: total contract Image: total contres Image: total contres <td>Il Value: -999.25 Set NULL Value</td>	Il Value: -999.25 Set NULL Value
-Depth Units STEI C MD C TVD C SSL	Extrapolate C Curve Depths EP Value: 2
	Exit

12. Click on the **Create File** button. This will activate a LAS file generation window indicating which curves are being exported. Then the process amalgamates all the curve data into a single LAS File. When the file generation has been completed a System Message will be generated.

There may be a message box encountered during this process indicating some of the curves selected have no data. You will have a choice of not including these curves in the LAS Export file.



13. Once the File has been created acknowledge the ensuing message by clicking on the

OK button.

14. Click on the **Exit** button to Close the application or **repeat steps 2-13** to create more LAS Curve data files.

Import Surveys New Method

The new method will allow the user to import ASCII or csv file format into our database. We cannot import xls 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. If the data has not been formatted correctly and the ASCII file has any non numeric characters such as Easting (E) or Northing (N) the user should utilize the old method of importing. The older method only imports the measured depth inclination and azimuth columns.

Importing Surveys

File Connect Disconnect Access Registration New Open Ctrl+N Open Close	-	1	 To access the Directional Survey Import window, click on Import / Export under File activate the pop-out menu and then select Import Surveys to activate a pop out menu select New Method or click on the Imp Survey button on the Toolbar. This will activate 		
Import / Export ASCII Export Backup	Import Log / Well Export Log / Well Import / Export LAS ►			It menu and select new r Directional Survey file wi	
Print Log Ctrl+P Print Morning Report Print Well End Report Print Reports to Word Print Setup Exit Survey Viewer	Import Surveys Export Surveys Import AGS Data Import AGS Data ASCII Import Import Dip Meter Import Dip Meter Import MDT Import Slide Rotate	New Method Old Method	Open Dir., Survey File Look in: DEMO Den for Calgary G 6:00 densky porosky.las H10MAINI.LAS bob las.cvm C fred.cvm LasReader (3)7.1-jun7-06.zi	Image: Second	
	Export INI Settings File Import INI Settings File		File name: survey.txt Files of type: All Files (*.*)	Open 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		C Comma 🕫 TAB C Space	
	Example Occolumn-break>225.00 <column-break>0.00<column-break>225.00<</column-break></column-break>		Example 0 225:00 0.00 0.00 225:00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	*
	Finish		Finish	
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 Directional survey import window shown on the next page.

		Choose Survey Group: 1	
Open File	Open Mapping File	Save Mapping File	Clear All Mapping
ick and Drag with the Left Mouse butto	on. Drag the columns of the data file over	to the corresponding field	
Data Column Column 1 Column 2 Column 3 Column 4 Column 5 Column 6 Column 7 Column 7 Column 8 Column 9 Column 10 Column 10 Column 11	Im	Field MEASURED_DEPTH TVD_DEPTH DEVIATION_ANGLE DEVIATION_AZIMUTH DEVIATION_N VERTICAL_SECTION COG_LEG_SEVERITY	Mapped Column
idit Data File Re	load Data File		
ample portion of file			
m deg deg m m 225,00 0.00 0.00 225,00 0.0 288,00 1.00 269,28 288,00 -0 413,00 1.00 288,15 412,98 0 548,68 1.06 265,15 548,64 0	+E/-W V'Sect D'Leg Build Turn m m '/30 '/30 '/30 10 0.00 0.00 0.00 0.00 01 0.55 0.04 0.48 0.48 -43.20 .32 -2.68 -0.17 0.08 0.00 4.53 .58 -5.05 -0.30 0.09 0.01 -5.09		
			>

Overview of the window.

The **left hand side** of the **Directional Survey Point 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 **Directional Survey Point Import window** allows the user to see the data fields associated with the Directional Survey Table supplied by Power*Suite.

Choose Survey Group: 1

Drop box allows the user to import the surveys into

unique survey groups that have been made in the program.

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

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

Save Mapping File

Button allows the user to save the mapping between data columns in the survey file to database fields in the survey point 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 survey point table again and again if you do not want to.

Clear All Mapping

database fields in the survey point table that was done either by dragging or by utilizing the mapping file.

Edit Data File

EXAMPLE 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 Survey data.

The survey group must exist in the database to be able to import survey 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.

Directional Survey Imports			X
File			
		Choose Survey Group: 1	<u>•</u>
Open File	Open Mapping File	Save Mapping File	Clear All Mapping
Click and Drag with the Left Mouse t	outton. Drag the columns of the data file ov	er to the corresponding field	
Data Column		Field	Mapped Column
Column 1		MEASURED_DEPTH	Column 2
Column 2		💦 TVD_DEPTH	Column 5
Column 3		DEVIATION_ANGLE	Column 3
🗹 🌺 Column 4		DEVIATION_AZIMUTH	Column 4
Column 5		DEVIATION_N	Column 6
Column 6		DEVIATION_E	Column 7
🗹 🌺 Column 7		Import KERTICAL_SECTION	Column 8
🗹 🌉 Column 8		DOG_LEG_SEVERITY	Column 9
Column 9			
Column 10			
🗆 🎇 Column 11			
		<	>
	e e e l		
Edit Data File	Reload Data File		
Sample portion of file			
Computalog			<u>^</u>
			<u> </u>
MD Inc Azi TVD +N m deg deg m m	/-S +E/-W V'Sect D'Leg Build Turn m m */30 */30 */30		
0 225.00 0.00 0.00 225.00			
1 288.00 1.00 269.28 288.00	-0.01 -0.55 0.04 0.48 0.48 -43.20		
2 413.00 1.00 288.15 412.98 3 548.68 1.06 265.15 548.64	0.32 -2.68 -0.17 0.08 0.00 4.53 0.58 -5.05 -0.30 0.09 0.01 -5.09		~
3 340.00 1.00 203.13 340.04	0.00 0.00 0.00 0.01 0.00		2
			Exit

N.B. The minimum requirement for us to calculate Minimum Curvature is the measured depth, Inclination and Azimuth and Measured Depth and Inclination for Drift Angle calculations. The user can import all the fields if they are available and no survey calculations are necessary unless you wish to update the well path or TVD fields in other windows.

- 3. The user can save this mapping procedure at this time by **clicking** on the **Save Mapping 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.



5.	Acknowledge the Import message. Click on the OK button and then click on the
	to exit or click on the Exit button to close the Window.
6.	This will prompt the user with a System Message asking the user if they wish to calculate the TVD
	and Well Path Calculations. Click on the <u>Yes</u> button if you need to update the well path or TVD fields or if you imported only the minimum fields and do not have any TVD on the import. Click on the
	No button if you have all the information you require on the import.
	System Message
	You have imported new surveys, do you wish to perfrom TVD / Well Path calculations?
	Yes No Cancel
lf you Cl	licked on the button move ahead to page 85.

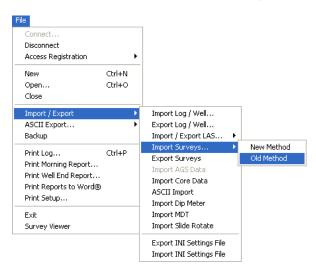
Import Surveys Old Method

If the data has not been formatted correctly and the ASCII file has any non numeric characters such as Easting (E) or Northing (N) the user should utilize the old method of importing. This method is better because it only imports the measured depth, inclination and azimuth columns and does not read the rest of the file.

Importing Surveys

To access the **Directional Survey Import** window, click on **Import / Export** under **File** to activate the pop-out menu and then select Import Surveys to activate another pop out selection and select Old method. This will activate the

Directional Survey Import window. **Method** or click on the **Directional Survey button** on the **Toolbar**.



)epth				-
)enth				Choose Delimiter
				space
Azimuth				
				<u>^</u>
0 120.00 0 120.00				~
e drop-down li				
Column 2	Column 3	Column 4	Column 5	
Angle 82.00 85.00 87.50 89.50 90.00 90.00	Azimuth 120.00 120.00 120.00 120.00 120.00 120.00			Measured Depth Column 1 Inclination Column 2
Column 7	Column 8	Column 9	Column 10	Azimuth Column
				IMPORT
	2 120.00 ect delimiter is e drop-down li olumns Column 2 Angle 82.00 85.00 85.00 85.00 85.00 87.50 89.50 90.00 90.00	1120.00 ect delimiter is selected, the e drop-down lists, choose will olumns Column 2 Column 3 Angle 82.00 Azimuth 120.00 87.50 120.00 99.50 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00	120.00 act delimiter is selected, the data should fit a drop-down lists, choose which curves ar olumns Column 2 Column 3 Column 1 Azimuth 82.00 120.00 87.50 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00 90.00 120.00	1120.00 sect delimiter is selected, the data should fill separate curve are for Measured olumns Column 2 Column 3 Column 4 Column 5 Angle Azimuth 20.00 20.00 120.00 87.50 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 120.00 90.00 120.00 120.00 120.00 100 100 120.00 120.00 120.00 100 100 120.00 120.00 100 100 100 120.00 120.00

- 1. **Click** on the **Choose File... button**, and select the data file provided by the directional drillers.
- 2. The next step is to select which **Survey Group** you want to Import the surveys into. The Default is Group 1.

If you wish to Import the surveys into a different group **click** on the **Survey Group... button** and then select the Survey Group form the List provided.

- 3. The next step is to **select** the correct **delimiter** for your file. Select one from the right hand drop down box. When you have selected the correct delimiter for your file, the curves should fill the individual columns.
- 4. From the top window, **choose a start depth** by clicking the first line of data you wish to import.
- 5. Select the columns that represent the *measured depth, Inclination and azimuth* values from the drop down boxes on the right hand side of the columns.
- 6. Click on the IMPORT button.

After a successful import, the directional surveys should contain the values of the measured depth, inclination and azimuth from the directional survey data file.

The next thing will be a System message asking the user

System	Message
٩	Do you wish to calculate your directional surveys now?
	Yes No

7. Click on the **button** only if you have the required fields filled in within the Directional Survey Report window. Otherwise, you will not be able to calculate the surveys.

TVD Calculations

The TVD Calculations window will perform either Minimum Curvature calculations if all the survey data has an azimuth or direction or can do Drift Angle calculations if the survey data only has a measured depth and an angle for both the Survey group imported into as well as the Master Survey group. This Master Survey group can consist of survey data from several groups of surveys that have been used throughout the drilling process. The Master Survey group must be chosen in the Directional Survey window. Also, this window we can update a Well path curve from the survey points in either TVD or SSL values starting at a desired measured depth. Also, if you would like to change or update any of the TVD fields scattered through the different report windows can also be done in this window. If a Master Survey group is built this survey data is utilized to perform all the TVD and SSL views for a specific well. This would only be applicable if there are multiple survey groups for a well and they cover different portions of the wells profile.

TVD Calculation
UWI ABC 0il 12:25
Calculate Directional Survey
Survey Group 1
Calculation Method: minimum curvature From: tie-in
Calculate Master Survey Group
Calculation Method: minimum curvature From: tie-in
Calculate Well Path
Well Path Curves Well Path (ssl)
Start Depth: 1460
Units: SSL 🔽 🔽 Survey Indicators
Calculate TVD Attributes
TVD Attributes: Formation: Log Top TVD
Select All MDT Data
Unselect All Sidewall Core: TVD Depth
Calculate Exit

Directional Survey Portion:

The User has the ability to have the program calculate the Directional Survey group, select which survey group they wish to calculate, which calculation method either minimum curvature or drift angle calculations and from either tie-in or kick off co-ordinates.

Procedure...

- 1. If the user wishes to calculate a Survey Group, activate the Check box 🔽 in this portion of the window.
- 2. If the default survey group is not correct, **click** on the Survey Group... **button** and select the survey group you wish to calculate from the List.
- 3. Select the Calculation method from the drop box. (Minimum curvature must have an azimuth and will fill in all the fields in the Survey Points Window, otherwise use drift angle to get only the TVD field completed in the Survey Points Window.)
- 4. Select the From Tie-In or Kick-Off co-ordinates.

The defaults are picked up from the User defined TVD Calculation portion of the 'Directional Surveys Report', found under the Reports menu selection. Kick Off is selected by default if not filled in. Remember that the data required for the Kick Off or Tie In reference is entered in the 'Directional Surveys Report', found under the Reports menu selection. Kick Off is selected by default.

Calculate Master Survey Portion:

The User has the ability to have the program calculate the Directional Surveys in the Master Survey group, which calculation method either minimum curvature or drift angle calculations and from either tie-in or kick off co-ordinates. The Master Survey Group can be compiled from points from different Survey Groups. The Master Survey group is built in the Directional Survey window. If there is only one survey group this procedure is not required. **The Master Survey group if built is then used to perform all TVD / SSL Calculations within the application. Procedure...**

- 1. Select the Calculation method from the drop box. (Minimum curvature must have an azimuth and will fill in all the fields in the Survey Points Window, otherwise use drift angle to get only the TVD field completed in the Survey Points Window.)
- 2. Select the From Tie-In or Kick-Off co-ordinates.

Well Path Portion:

The Well Path for lack of better terms will update any curve on your log with either TVD or SSL data and will start at any depth required. It basically plots a curve with respect to measured depth and the survey data's TVD calculations which can also be converted to SSL if a KB elevation has been entered into the Well Record located under the Edit menu selection.

Procedure...

- 1. If the user wishes to calculate or update the Well path curve activate the Check box 🗹 in this portion of the window.
- 2. Select which curve you wish to populate with this data by **clicking** on the selecting the curve from the existing curve in the database.
- 3. **Type in** the **Start depth** for which the curve will first appear on the log.
- 4. Select which units you would like this curve to be plotted or updated with from the Units selection box. TVD is the direct calculations from the survey points. SSL are converted with respect to the wells Kelly Bushing Elevation.

TVD Attributes Portion

Procedure...

1. If the user wishes to calculate or update the specified TVD fields within the various windows throughout the Reports **activate** the Check box in this portion of the window.

The program is only able to determine the TVD at any depth covered by the directional surveys. Power*Log and Power*Curve have several windows in which the measured depth and corresponding true vertical depth are asked for. If you have directional surveys over that interval, the program will calculate the exact TVD for you. If it is outside the range of your surveys, it will be left as a manual entry.

- 2. Select or click on which fields (highlight) you wish to calculate for or recalculate if you have changed the survey data. Remember you have the ability to select all or unselect all.
- 3. Click on the Calculate button.

How to Import a Survey Data with an Existing mapping file.

1. To access the Directional Survey Import window, click on Import / Export under File to activate the pop-out

menu and then select **Import Surveys** or click on the **Import Survey button** on the **Toolbar**. This will activate the open Directional Survey file window as shown below.

Open Dir. Sı	ırvey File		? 🛛
Look in: 🔯	DEMO	- + E	r 🖬 🕈
410MAIN1. bob las.cvr fred.cvm	y porosity.las LAS	my surveys.dsm morwest albian.cdm morwest albian.cdm morwey imperial.txt more survey import.psm more.txt more survey.txt more	d WELL.DA
<			>
File name:	survey.txt		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		C Comma 🔍 TAB C Space	
	Example Occolumn-break:> 225.00 <column-break:> 0.00<column-break:> 0.00<column-break:> 225.00</column-break:></column-break:></column-break:>		Example 0 225.00 0.00 0.00 225.00 0.00 0.00 0.00	
	Frish		Finish	>
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 Directional survey import window shown below.

4. In the upper portion of the window **click** on the window.

Open Dir. Su	urvey Mapping File	? 🗙
Look in: 🗀	DEMO 💌 🗲 🖻 📸 🎟 🕇	
DBL Output	gary	
File name:	my surveys.dsm Open	
Files of type:	Directional Survey Map files (*.dsm)	»

5. Select the mapping file with the ***.dsm** saved from previous imports of similar survey data files to your directional survey table by highlighting the file and **clicking** on the **Den 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.

		Choose Survey Group: 1	
Open File	Open Mapping File	Save Mapping File	Clear All Mappi
Click and Drag with the Left M	louse button. Drag the columns of the data file o	ver to the corresponding field	-
Data Column		Field	Mapped Col
Column 1		MEASURED_DEPTH	Column 2
🗹 🌉 Column 2		TVD_DEPTH	Column 5
Column 3		DEVIATION_ANGLE	Column 3
Column 4		DEVIATION_AZIMUTH	Column 4
Column 5		DEVIATION_N	Column 6
Column 6		DEVIATION_E	Column 7
Column 7		Import KERTICAL_SECTION	Column 8
Column 8	-	DOG LEG SEVERITY	Column 9
Column 9			
Column 10			
Column 11			
		<	
Edit Data File	Reload Data File	here i	
	Theioad D'ata The		
Sample portion of file			
Computalo	g		
	D +N/-S +E/-W V'Sect D'Leg Build Turn m m */30 */30 */30		
	5.00 0.00 0.00 0.00 0.00 0.00 0.00		
m deg deg m 225.00 0.00 0.00 22			
0 225.00 0.00 0.00 22 1 288.00 1.00 269.28 2	88.00 -0.01 -0.55 0.04 0.48 0.48 -43.20		
) 225.00 0.00 0.00 22 1 288.00 1.00 269.28 2	88.00 -0.01 -0.55 0.04 0.48 0.48 -43.20 12.98 0.32 -2.68 -0.17 0.08 0.00 4.53		
0 225.00 0.00 0.00 22 1 288.00 1.00 269.28 2 2 413.00 1.00 288.15 4 3 548.68 1.06 265.15 5	88.00 -0.01 -0.55 0.04 0.48 0.48 -43.20 12.98 0.32 -2.68 -0.17 0.08 0.00 4.53		
) 225.00 0.00 0.00 22 1 288.00 1.00 269.28 2	88.00 -0.01 -0.55 0.04 0.48 0.48 -43.20 12.98 0.32 -2.68 -0.17 0.08 0.00 4.53		
0 225.00 0.00 0.00 22 1 288.00 1.00 269.28 2 2 413.00 1.00 288.15 4 3 548.68 1.06 265.15 5	88.00 -0.01 -0.55 0.04 0.48 0.48 -43.20 12.98 0.32 -2.68 -0.17 0.08 0.00 4.53		Exit

- 7. Click on the but
- **button**. After the data has been imported you will be prompted with a system message.

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	Database Message
8.	Acknowledge the Import message. Click on the OK button and then click on the Field to exit or click on the Exit button to close the Window.
9.	This will prompt the user with a System Message asking the user if they wish to calculate the TVD and Well Path Calculations. Click on the <u>Yes</u> button if you need to update the well path or TVD fields or if you imported only the minimum fields and do not have any TVD on the import. Click on the <u>No</u> button if you have all the information you require on the import.
-	System Message Image: System Message You have imported new surveys, do you wish to perfrom TVD / Well Path calculations? Image: System Message Yes No Cancel

Export Surveys

This utility exports your survey data into 3 file formats which can then be used by other applications.

Exporting Surveys

To access the Export Directional Surveys window, click on Import / Export under File to activate the pop-out menu and then select Export Surveys. This will activate the Export Directional Surveys window.

File				
Connect Disconnect Access Registration	۲			
New	Ctrl+N			
Open	Ctrl+O			
Close			Export Directional Surveys	
Import / Export ASCII Export Backup Print Log Print Morning Report	Ctrl+P	Import Log / Well Export Log / Well Import / Export LAS Import Surveys Export Surveys	Choose Survey Group	
Print Well End Report Print Reports to Word® Print Setup		Import AGS Data Import Core Data ASCII Import Import Dip Meter	Comma Separated Values (*.CSV) Iab Separated Values (*.TXT) Space Separated Values (*.TXT)	
Exit Survey Viewer		Import MDT Import Slide Rotate	Export Survey	
		Export INI Settings File Import INI Settings File	E2	<u>sit</u>

- Click on the Choose Survey Group drop down arrow and select a survey group.
 Click on the radio button next to the type of the file that you would like to create.
- 3. Click on the **Export Survey** button. This will activate a Specify Survey Export File Name window.

Specify Surv	ey Export Fi	ile Name	? 🗙
Save jn: 🞯	Desktop		* 📰 •
My Docume My Comput My Network Is certify MyDesktop	er k Places	PowerSuite 5.1 PowerSuite 6.0 printer settings Win 2000 HASP installer Shortcut to IndividualFiles	
File <u>n</u> ame:	survey.CSV		<u>S</u> ave
Save as <u>t</u> ype:	Export Files (*.	CSV)	Cancel

4. Type in a file name and select the drive and directory you wish the survey to be exported to. Then, **click** on the

🔜 butto	n. This wil	I activate the Sys	tem Informatio	on window a	asking you	if you wish	to proceed.
---------	-------------	--------------------	----------------	-------------	------------	-------------	-------------

System Information- Directional Survey Export								
	A file survey.CSV will be created in the D:\Documents and Settings\Administrator.WORKCOMP\Desktop\ directory. Do you wish to proceed?							
	<u>Yes</u> <u>No</u>							
Click on the Yes butto	on. This will activate the Survey Export File C	reated window.						
	Survey Export File Created							
	File D:\Documents and Settings\Administrator.WORKCOMP\Desktop\survey.CSV created							
	OK							

6. Click on the **DK** button and then click on the **Exit** button to exit Export Directional Surveys window.

Import AGS (Only relative to Apple Core Data files that are Version 9.2D)

Import Core Plug Data

5.

This method will allow the user to import ASCII or csv file formats into our database. We cannot import xls 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.

How to import Core Plug data

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

then select Import Core Data or click on the Import Core Data button on the Toolbar. This will activate the open Core Plug data file window as shown below.

Connect Disconnect Access Registration	•			
New Open Close	Ctrl+N Ctrl+O		Open Core Plug Data	. File ?
Import / Export ASCII Export Backup	•	Import Log / Well Export Log / Well Import / Export LAS •	Look in: C Albian	
Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup		Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dio Meter	때 ASE06-1007.exp 팩 ASE06-1009-432031.o 폐 ASE06-1009-432031.o 때 ASE06-1009.exp	POWERCORE_DBL_JNF0.doc csv POWERCORE_DBL_JNF0.ZIP xls POWERCORE_EXPL.dbl
Exit Survey Viewer		Import MDT Import Slide Rotate	File name: ASE06-10	007-432021.csv Open
		Export INI Settings File Import INI Settings File	Files of type: All Files (*	Cancel

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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 on the file name 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
	⊂ Comma ⊂ TAB ☉ Space		C Comma 🕫 TAB C Space
	Example Occolumn-break>225.00 <column-break>0.00<column-break>0.00<column-break>225.00</column-break></column-break></column-break>		Example 0 225.00 0.00 0.00 225.00 0.00 0.00 0.00
	Finish		S Finish
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 will	ndow and active	ate the Directional survey	import window.
Core Plug Data Import			
File			
Open File Click and Drag with the Left Mouse button. Drag Data Column Column 1 Column 1 Column 5 Column 5 Column 5 Column 7 Column 7 Column 7 Column 10 Column 10 Column 11 Column 12 Column 13 Column 14 Colu		Import Save Mapping File Field Field Sample Code Sample # Top Base Sample Length Rep. Length Sat Bulk Mass Fraction (Oil) Sat Bulk Mass Fraction (Totals) Sat Bulk Mass Fraction (Totals) Sat Bulk Mass Fraction (Oil)	Clear All Mapping
Column 15		Sat. Pore Vol. (Water)	×
Column 16 Edit Data File Reload Da	ta File	<	
Sample portion of file Laboratory."Core Laboratories Canada, Ltd.",,,,, Company Creek Limited,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
<			×
			Exit

Overview of the window.

The **left hand side** of the **Core Plug 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 **Core Plug Data Import window** allows the user to see the data fields associated with the Core Plug Data Table supplied by Power*Suite.

Open File

Button allows the user to open another Core Plug data file after the Import window has been opened.

Open Mapping File **Button** allows the user to utilize the mapping file saved from above to remap data columns in the survey file to database fields in the survey point table in the database.

Save Mapping File

fields in the Core Plug 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 survey point table again and again if you do not want to.

Clear All Mapping

database fields in the survey point 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 Word pad to look at the file format and possibly make changes to the data file prior to importing the files data.

Reload Data File

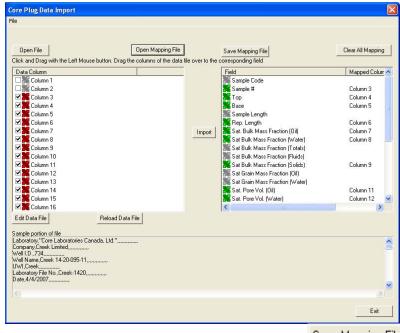
Button reloads the data into the sample portion of the file window.

Importing / Mapping of Core Plug 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.



- 3. The user can save this mapping procedure at this time by **clicking** on the **Save Mapping 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.



How to Import Core Plug Data with an Existing mapping file.

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

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

Open Core I	Plug Data File		? 🔀
Look in: 隘	Albian	⇒ ▼	🖻 💣 📰 •
ASE06-100	09-432031.csv 09-432031.xls	Facies csv format for Facies csv format for POWERCORE_DBL_I POWERCORE_DBL_I POWERCORE_EXPL. POWERCORE_EXPL.	[,] Krista.ZIP NFO.doc NFO.ZIP dbl
<			·
File name:	ASE06-1007-432	021.csv	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 on the file name 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.

Set Delimiter	Set D	elimiter 🔀
C Comma C TAB 💿 Space	00	Comma 🕫 TAB C Space
Example Occolumn-break>225.00 <column-break>0.00<column-break>0.00<column-break>225.00</column-break></column-break></column-break>	Exam 0 22	nple 5: 00 0.00 0.00 225:00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
	<	2
Finish		Finish
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 Directional survey import window shown on the next page.

4. In the upper portion of the window **click** on the window.

Core Plug D	ata Mapping File	? 2	<
Look in: 隘	Albian	· ← 🗈 💣 📰 •	
100	s hwest basics.cdm west data.cdm		
File name:	*.cdm	Open	
Files of type:	Core Plug Data Map files (*.cdm)) Cancel	

5. Select the mapping file with the *.cdm saved from previous imports of similar core data files to your core plug

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.

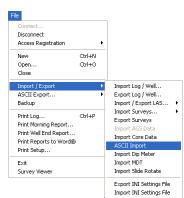
Core Plug Data Import			
File			
Open File	Open Mapping File	l a u m l	Clear All Mapping
	Mouse button. Drag the columns of the data	Save Mapping File	
	rouse button. Drag the columns of the data		
Data Column		Field	Mapped Colum
Column 1		Sample Code	Column 3
Column 2		The second s	Column 3 Column 4
Column 3		Top Base	Column 4 Column 5
Column 5		Sample Length	Column 5
Column 6		Rep. Length	Column 6
Column 7		Import Sat. Bulk Mass Fraction (
Column 8		Sat Bulk Mass Fraction N	
Column 9		Sat Bulk Mass Fraction (
Column 10		Sat Bulk Mass Fraction (
Column 11		Sat Bulk Mass Fraction (
Column 12		Sat Grain Mass Fraction	
Column 13		Sat Grain Mass Fraction	(Water)
🗹 🌌 Column 14		💦 Sat. Pore Vol. (Oil)	Column 11
Column 15		😹 Sat. Pore Vol. (Water)	Column 12
Column 16		<	>
Well I.D.,734, Well Name,Creek, 14-20-095- UWJ,Creek,Call Laboratory File No.,Creek-14, Date,4/4/2007,			
			Exit
Click on the Import	button . After the data has	been imported you will be pro	ompted with a system mes
	4	Imported Successfully.	
Acknowledge the In	nport message. Click on the		en click on the
Acknowledge the In exit or click on the	nport message. Click on the	OK button and th	en click on the

This method will allow you to import one or more curves into the database and your log. If the curve already exists in the database and is shown on a curve layer then the curve and its' data will appear automatically on the log. If the curve does not exist the user must create a layer for that curve to be shown or replace an existing curve on an existing layer with a new curve.

This method will allow you to import one or more curves into the database. However, right click method may be easier if you only have one curve to import. Refer to page 473 Also refer to Right Click ASCII Import Method.

1. Click on the File pull down menu selection and click on Import / Export and then click on ASCII Import from

the pop out-menu or simply click on the **ASCII Import button**, on the **Toolbar**, to activate the **ASCII** Import window.



2. This will then activate the Open window which allows the user to select the ASCII file they wish to import the curve data from. Find the file and directory and highlight the file by **clicking** on it **once** and then **click** on the **Open**

button. This will prompt you with a Set delimiter window as shown below. If you see <column break> between the data columns the delimiter is set correctly.

	Set Delimiter		Set Delimiter	$\mathbf{\times}$
	C Comma C TAB 📀 Space		C Comma 🔍 TAB C Space	
	Example 704.0xcolumn-break>3.68xcolumn-break>160		Example 704.0 3.68 160	2
Correct	Finish	Not correct	Finish	

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 ASCII Import window shown below.

ASCII Curve Import						×
Open File Click and Drag with the Left M		Mapping File	Save Mapping File		Clear Al	l Mapping
Data Column Column 1 Column 2 Column 3	Depth ID DEPTH		Curve Layer Gamma Ray Well Path (TVD) Drill Rate Total Gas	Curve ID Gamma Ray Well Path (TVD) Drill Rate Total Gas	Mapped Data	Action
			<)	>
Choose Depth Column: File Preview	Column 1	•	🔽 Append Data To Curve			
704.0 3.68 705.0 3.37 706.0 3.78 707.0 3.35 708.0 3.97 709.0 3.15 710.0 3.80	160 282 139 544 533 147 436					<
Edit Data File Reload Dat	a File					Exit

Overview of window

The **left hand side** of the **ASCII Curve Import window** allows the user to see the ASCII file data columns. The first data column has been defaulted to the depth column and has been given a purple color.

The **right hand side** of the **ASCII Curve Import window** allows the user to see their log and the curve layers associated with the log that is open and active at the time the ASCII Curve Import window was invoked.

Choose File Button allows the user to open another ASCII file after the ASCII Curve Import window has been opened.

Save Mapping File

Button allows the user to save the mapping between curves and layers when it has been done so that if you have to use a similar ASCII file and/or a similar log format in the future. This enables the user to utilize the mapping that was done for the original so you do not have to repeat the clicking of dragging of curves to layers again and again if you do not want to.

Open Mapping File Button allows the user to utilize the mapping file saved from above to remap the curves to

layers.

Clear All Mapping Button allows the user to undo all the mapping from curves to layers that was done either by dragging or by utilizing the mapping file.

Append Data To Curve Check box will default the import to append the data. So it will check to see if the data exists and then will replace or append the data. If this is unchecked then the default will be replace which will delete the entire curve and replace the curve with the ASCII data that will be imported.

Edit Data File

Choose D

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.

epth Column:	Column 1 📃 💽	
	Column 1	
	Column 2	
	Column 3	

Drop box allows the user to determine which column is the depth column in the data file. When it is chosen the color of the curve will change to purple.

Importing / Mapping of ASCII Curve data.

The log portion of the window must have a log open to directly map or import a curve to a particular layer. The ASCII file must also be open on the left side of the window to view a list of curves to import.

1. On the left side of the window **Click and drag** the **data column** you wish to import to the **curve layer** on the right side and release it when the layer becomes highlighted.

N.B. The user can **Right click** on the **Curve Layer ID** to remove the mapping or switch the action from append to replace. Note the legend of the mapping techniques.

 Repeat the Clicking and Dragging of curves to curve layers until all have been mapped. The user can also bring over new curves to the well without having a layer to show the curves on. You would then have to associate that curve to a new layer at a later date. This would be done through the log configuration builder on adding a new curve layer.

Open File]	-	pen Mapping File	Save Mapping File			Clear All Mappir
ck and Drag Nata Column	with the Left	Mouse button. Drag th	ne columns of the data file	e over to the corresponding Curve Layer	field Curve ID	Mapped Data	Action
Column	2	DEPTH	Impo	Gamma Ray Well Path (TVD)	Gamma Ray Well Path (TVD) Drill Rate Total Gas	Column 2 Column 3	APPEND APPEND
Choose D	epth Column:	Column 1	×	 Append Data To Cu 	Ive		
704.0 705.0 706.0 707.0 708.0 709.0 710.0	3.68 3.37 3.78 3.35 3.97 3.15 3.80	160 282 139 544 533 147 436					
							2

- 3. The user can save this mapping procedure at this time by clicking on the Save Mapping 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**. If done successfully you will be prompted with a System Message indicating Import done successfully as shown below.

			Database Message
			Imported Successfully.
			ОК
5.	Acknowledge the I	Import messag	e. Click on the OK button and then click on the COK to
	exit or click on the	Exit	button to close the ASCII Curve Import Window.

Importing ASCII Curve data with an Existing mapping file.

The log /well must be open for you to import ASCII Curve data into the well.

1. Click on the File pull down menu selection and click on Import / Export and then click on ASCII Import from

the pop out-menu or simply **click** on the **ASCII Import button**, on the **Toolbar**, to activate the **ASCII Import** window.

2. This will then activate the Open window which allows the user to select the ASCII file they wish to import the curve data from. Find the file and directory and highlight the file by **clicking** on it **once** and then **click** on the

Dpen button. This will prompt you with a Set delimiter window as shown below. If you see <column break> between the data columns the delimiter is set correctly.

	Set Delimiter		Set Delimiter	×
	C Comma C TAB 🕫 Space		C Comma 🕫 TAB C Space	
	Example 704.0 <column-break>3.68<column-break>160</column-break></column-break>		Example 704.0 3.68 160	×
Correct		Not correct		

- Click on the correct delimiter radio button. Click on the you will see something similar to the window shown below.
- 4. Click on the Open Mapping File button This will activate a open ASCII Curve Mapping file dialogue window. Select the correct or previously saved *. <u>acm file saved</u> from previous imports of similar data to similar logs by

button. If your log is open at the time

highlighting the file and **clicking** on the **Den** button or double clicking on the file name.

Open ASCII (Curve Mapping File
Look in: 🔀	DEMO 💌 🛨 🛅 -
DBL Outpu DBL Outpu Jen for Cal datalog da	gary
File name:	datalog dat file.acm Open
Files of type:	ASCII Curve Map files (*.acm)

N.B. The user can **Right click** on the **Curve Layer ID** to remove the mapping or switch the action from append to replace. Note the legend of the mapping techniques being performed.

- 5. The user can map more curves on the left side of the window **by Clicking and dragging** the **curve** you wish to import to the **curve layer** on the right side and release it when the layer becomes highlighted.
- 6. **Click** on the **button**. If done successfully you will be prompted with a System Message indicating Import done successfully as shown below.

•••		
	Databas	e Message 🛛 🛛
	(į)	Imported Successfully.
		ок
• k o	n the	OK

7. Acknowledge the Import message. Click on the button and then click on the Exit

exit or **click** on the **button** to close the ASCII Curve Import Window.

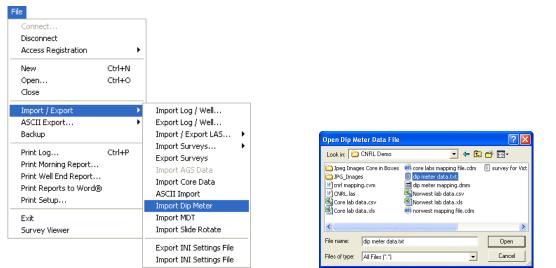
Import Dip Meter Data

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.



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.

Set Delimiter	Set Delimiter
C Comma C TAB 🔍 Space	🤨 Comma 🔿 TAB 🔿 Space
Example 6.57 column-break> 9.4 < column-break> 234.1 < column-break> 50 < column-break> 3.4 < column-break> 3.4 < column-break> 50 < column-break> 3.4 < column-break> 50 < column-brea	Example 6.57 9.4 234.1 .50 3.4 193.8 COMPUTED
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 Dip Meter Data Import window.

ip Meter Data Import			
ile			
	Open Mapping File	Save Mapping File	1 Clear All Mapping
Data Column Column 1 Column 2 Column 3 Column 3 Column 4 Column 5 Column 6 Column 7		Field Depth Dip Azimuth Quality Hole Deviation Degrees Hole Azimuth Type	Mapped Column
Edit Data File Rel	oad Data File	< j	
Sample portion of file #DEPTH DIP AZIM QUAL DEF #0.57 9.4 234.1 .50 3.4 193 6.92 20.2 256.8 .50 3.4 193 7.19 19.7 246.1 .50 3.4 194 7.57 17.4 225.3 .50 3.4 194 7.88 16.7 251.2 .50 3.4 194 7.88 16.7 251.2 .50 3.4 194	8 COMPUTED 1.1 COMPUTED 1.3 COMPUTED 1.4 COMPUTED 1.6 COMPUTED		×
			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 Mapping 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 Mapping 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.

ip Meter Data Import			
ile			
		Dip Meter Group	•
Open File	Open Mapping File	Save Mapping File	Clear All Mapping
Click and Drag with the Left Mouse button. Drag t	the columns of the data f	an a	
Data Column		Field	Mapped Column
Column 1		Depth	Column 1
Column 2		Dip Degree	Column 2
Column 3		Dip Azimuth	Column 3
Column 4		Quality	Column 4
Column 5		Hole Deviation Degrees	Column 5
Column 6		Hole Azimuth	Column 6
🗹 🌺 Column 7		Import K Type	Column 7
		4	
Edit Data File Reload Data	a File	, < j) >
	a File		
Sample portion of file #DEPTH DIP AZIM QUAL DEVI HA			
Sample portion of file #DEPTH DIP AZIM QUAL DEVI HA #	ZI DIPTYPE		
Sample portion of file #DEPTH DIP AZIM QUAL DEVI HA #	ZI DIPTYPE	≪] <u>₩</u>	
Sample portion of file #DEPTH DIP AZIM QUAL DEVI HA #	ZI DIPTYPE		
Sample portion of file #DEPTH DIP AZIM QUAL DEVI HA #=	ZI DIPTYPE IMPUTED OMPUTED OMPUTED OMPUTED OMPUTED		
Sample portion of file #DEPTH DIP AZIM QUAL DEVI HA #	ZI DIPTYPE		
Sample portion of file #DEPTH DIP AZIM QUAL DEVI HA # 657 9.4 234.1 50 3.4 193.8 CO 6.57 9.4 234.1 50 3.4 193.8 CO 7.19 19.7 246.1 50 3.4 194.3 CO 7.58 16.7 251.3 .50 3.4 194.4 CO 7.88 16.7 251.2 .50 3.4 194.4 CO 7.88 16.7 251.2 .50 3.4 194.6 CO 8.25 17.7 236.7 .50 3.4 194.6 CO	ZI DIPTYPE IMPUTED OMPUTED OMPUTED OMPUTED OMPUTED		

- 3. The user can save this mapping procedure at this time by **clicking** on the **Save Mapping 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
		iported Successfully.
		ОК
-		ick on the OK button and then click on the K to exit or
5.	Acknowledge the import message. Cil	ck on the lock on the lock of the loc
	click on the Exit button to cl	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 Meter Data File	? 🛛
Look in: 🗀 CNRL Demo	- 🖬 📩 -
Jpeg Images Core in Boxes JPG_Images drnl mapping.cvm CNRL.las Core lab data.csv Core lab data.xls	core labs mapping file.cdm file.netrr dsta.txt dig meter dsta.txt dig meter mapping.dmm dig Norwest lab data.csv Norwest lab data.xls in norwest mapping file.cdm
<	>
File name: dip meter data.ta	d 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.

1	Set Delimiter		Set Delimiter
	C Comma C TAB 💿 Space		
	Example 6.57 <column-break>9.4<column-break>234.1<column-break>.50<column-break>3.4<col< th=""><th></th><th>Exemple 6.57 9.4 234.1 .50 3.4 193.8 COMPUTED</th></col<></column-break></column-break></column-break></column-break>		Exemple 6.57 9.4 234.1 .50 3.4 193.8 COMPUTED
	Finish		Finish
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 Dip Meter Data Import window shown on the next page.

4. In the upper portion of the window **click** on the window.

Dip Meter D	ata Mapping File		? 🛛
Look in: 🔀	CNRL Demo	- + 1	📸 🎟 •
DPG_Image	es Core in Boxes is napping.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.

	Dip Meter Data Import		
	File		
		Dip Meter Group	-
	Open File Open Mapping File	Save Mapping File	Clear All Mapping
	Click and Drag with the Left Mouse button. Drag the columns of the data file over to		
	Data Column	Field	Mapped Column
	Column 1	Depth	Column 1
	Column 2	Dip Degree	Column 2 Column 3
	Column 4	Quality	Column 4
	Column 5	Hole Deviation Degrees	Column 5
	Column 6	Hole Azimuth	Column 6
	Column 7 Impo	rt Type	Column 7
		<	
	Edit Data File Reload Data File		
	Sample portion of file #DEPTH DIP AZIM QUAL DEVI HAZI DIPTYPE		~
	#		
	6.92 20.2 256.8 .50 3.4 194.1 COMPUTED		
	7.19 19.7 246.1 .50 3.4 194.3 COMPUTED 7.57 17.4 225.3 .50 3.4 194.4 COMPUTED		
	7.88 16.7 251.2 .50 3.4 194.6 COMPUTED		
	8.25 17.7 236.7 .50 3.4 194.8 COMPUTED		>
			Exit
	Import		Exit
c on the	Import	imported you will be pro	Exit
c on the	Import button. After the data has been i		Exit
< on the	Import		Exit
c on the	Import button. After the data has been i	ge 🔀	Exit
k on the	Import button. After the data has been i		Exit
k on the	Import button. After the data has been i	ge 🔀	Exit
c on the	Import button. After the data has been i	ge 🔀	Exit
on the	Import button. After the data has been in Database Message	ge 🔀	Exit
a on the	Import button. After the data has been in Database Message	ge 🔀	Exit
	Import button. After the data has been i	ge 🔀 d Successfully.	mpted with a system mes
	Import button. After the data has been i	ge 🔀	mpted with a system mes
	Import button. After the data has been i	ge 🔀 d Successfully.	mpted with a system mes

7.

8.

Import Modular Dynamic Tester (MDT) 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 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.

ile		-				
Connect						
Disconnect						
Access Registration	<u> </u>					
New	Ctrl+N					
Open	Ctrl+O					
Close			0 UDT 0			
Import / Export	Þ	Import Log / Well	Open MDT D			2
ASCII Export	+	Export Log / Well	Look in: 🗀	CNRL Demo	💌 🛨 🖻] 💣 🎟 -
Backup		Import / Export LAS 🕨	Deg Imag	jes Core in Boxes	🕷 core labs mapping file.cdm	🗰 norwest m
Duichlas	Ctrl+P	Import Surveys 🕨	DPG Image		in dip meter data.txt	survey for
Print Log	Cm+P	Export Surveys	Corrl mappin		dip meter mapping.dmm	J 54/10/10/
Print Morning Report		Import AGS Data	CNRL.las	igici in	MDTDATA2.csv	
Print Well End Report		Import Core Data	Core lab da	ata.csv	Norwest lab data.csv	
Print Reports to Word®		ASCII Import	Core lab da		Norwest lab data.xls	
Print Setup		Import Dip Meter				
Exit		Import MDT	<			
Survey Viewer		Import Slide Rotate	File name:	MDTDATA2.csv	/	Open
		Export INI Settings File Import INI Settings File	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
⊙ Comma	C TAB C Space		C Comma C TAB 🕫 Space
Example seq <column-br< th=""><th>eak>md<column-break>tvd<column-break>ssl<column-break>hp before<c< th=""><th></th><th>Example seq.md.tvd.ssl.hp<column-break>before.hp<column-break>after.fp.efw,temp.mob.formatic</column-break></column-break></th></c<></column-break></column-break></column-break></th></column-br<>	eak>md <column-break>tvd<column-break>ssl<column-break>hp before<c< th=""><th></th><th>Example seq.md.tvd.ssl.hp<column-break>before.hp<column-break>after.fp.efw,temp.mob.formatic</column-break></column-break></th></c<></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
		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 MDTDATA.csv				X
File				
Open File Open Mapping File Open Mapping File		MDT Run Save Mapping File	1	Clear All Mapping
Click and Drag with the Left Mouse Button. Drag the columns of the data f Data Column 1 Column 2 Column 3 Column 4 Column 5 Column 5 Column 6 Column 7 Column 7 Column 9 Column 10 Column 11 Column 12 Column	Import	Field Seq. No. Measured Depth SSL Depth Hydro. Prs. (Before) Hydro. Prs. (After) Formation Prs. Eqvl. Fluid Weight Temp (*C) Mobility Formation Remarks		Mapped Column
Edit Data File Reload Data File		<		>
Sample portion of file seq.md.tvd.ssl.hp before.hp after.fp.efw.temp.mob.formation.comment 1.201,201,799,2500,77,2002.44,1803.32,0.995,67,1,506,6148904,clearw 2.201.5,201.5,798.5,2510.35,2012.11,1813.99,0.995,69,2,112.6644215, 3.202,202,798,2519.93,2021.78,1824.66,0.995,71.3,965,3932499,clearw 4.202,5,202,5,797,5,2529,51,2031.45,1835.33,0.995,73.4,58.14929308, 5.203,203,797,2538.09,2041.12,1486,0.995,75,537,32302583,clearwate 6.203,5,203,5,796,5,2548.67,2050,79,1856,67,0.995,77,6,297,5523437, 7,204,204,736,2558,25,2060.46,1867,34,0.995,79,7,567,6831381,clearw	clearwater,all o vater,all ok clearwater,all o er,all ok clearwater,all o	k		
				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

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 Mapping 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 Mapping 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.

		MDT Run	1	
Open File	Open Mapping File	Save Mapping Fil	e	Clear All Mapping
ick and Drag with the Left M	ouse button. Drag the columns of the data fil	e over to the corresponding field		
Data Column		Field		Mapped Columr
🛛 🕌 Column 1		Seq. No.		Column 1
🛛 🚟 Column 2		Measured De	pth	Column 2
🛛 🔀 Column 3		😽 TVD Depth		Column 3
🛛 🎇 Column 4		SSL Depth		Column 4
🛛 🎇 Column 5		💦 Hydro. Prs. (B	efore)	Column 5
🛛 🎇 Column 6		🔀 Hydro. Prs. (A	fter)	Column 6
🛛 🎇 Column 7		Import 💦 Formation Prs.		Column 7
🛛 🎇 Column 8		Eqvi. Fluid We	eight	Column 8
🛛 🎇 Column 9		💦 Temp (*C)		Column 9
🛛 🎇 Column 10		💦 Mobility		Column 10
🛛 🎇 Column 11		😽 Formation		Column 11
🛛 🌺 Column 12		🔀 Remarks		Column 12
		<		
dit Data File	Reload Data File	<u>) </u>		
ample portion of file				
	er, fp, efw, temp, mob, formation, comment			
	44,1803.32,0.995,67.1,506.6148904,clearw 2012.11,1813.99,0.995,69.2,112.6644215,c			
202,202,798,2519.93,2021.7	78,1824.66,0.995,71.3,965.3992499,clearw	ater,all ok		
	2031.45,1835.33,0.995,73.4,58.14929308,c 12,1846.0.995,75,5.37,32302583.clearwater			
	2050.79,1856.67,0.995,77.6,297.5523437,c			
	16,1867.34,0.995,79.7,567.6831381,clearw			
				>

- 3. The user can save this mapping procedure at this time by **clicking** on the **Save Mapping 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.



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 **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: 🔯	CNRL Demo	• •) 💣 🔳
Deg Image DPG_Image Cnrl mappir CNRL.las	ng.cvm ata.csv	Core labs mapping file.cdm dip meter data.txt dip meter mapping.dmm MDTDATA2.csv Norwest lab data.csv Norwest lab data.xls	👬 norwest mappi 📳 survey for Vict
<			>
File name:	MDTDATA2.csv	/	Open
Files of type:	All Files (*.*)	•	Cancel

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 uppen 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	3 (Set Delimiter
		C Comma C TAB 📀 Space
Example seq <column-break>md<column-break>tvd<column-break>ssk<column-break>hp before<</column-break></column-break></column-break></column-break>		Example seg.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.

In the upper portion of the window click on the window.

MDT Data M	apping File 🔹 🤶 🔀
Look in: 🗀	CNRL Demo 💽 🗲 🖻 📸 -
inag Imag (고) 가도 Image Image (고) 가다 Image Image 그 Image I Image Image Ima Image Image Ima Image Image Ima Image Image Imag Image Image Imag Image Image Imag Image Image Ima Image Image	
File name:	mdt mapping file.mdt Open
Files of type:	MDT Data Map files (*.mdt)

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.

button. This will activate an open file

ſ	MDT Data Import MDTI	DATA.csv				X
	File					
				MDT Run	1	•
	Open File	Open Mapping	File	Save Mapping File		Clear All Mapping
	· · · · · · · · · · · · · · · · · · ·	fouse button. Drag the columns of the				
		I I I I I I I I I I I I I I I I I I I				
	Data Column			Field Sea. No.		Mapped Column Column 1
	Column 1			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
	🗹 🎇 Column 7		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			💦 Remarks		Column 12
				<		>
	Edit Data File	Reload Data File				
	Sample portion of file					
	seq.md.tvd.ssl.hp before.hp a	after, fp, efw, temp, mob, formation, commer	nt			<u>^</u>
	2,201.5,201.5,798.5,2510.35	.44,1803.32,0.995,67.1,506.6148904, ,2012.11,1813.99,0.995,69.2,112.6644	4215,clearwater,all (ok		_
	3,202,202,798,2519,93,2021.	.78,1824.66,0.995,71.3,965.3992499,0	clearwater,all ok			
		,2031.45,1835.33,0.995,73.4,58.1492 .12,1846,0.995,75.5,37.32302583,clea		ж		
	6,203.5,203.5,796.5,2548.67,	,2050.79,1856.67,0.995,77.6,297.552	3437,clearwater,all c	ok		
	7,204,204,796,2558.25,2060.	.46,1867.34,0.995,79.7,567.6831381,	clearwater,all ok			>
						Exit
L	Import					
ick	on the built built	utton. After the data ha	as been imp	ported you will b	pe prompted	with a system mes
		Dat	abase Message			
			 Imported Suc 	cessfully.		
			4			
			ОК			
				J		
			ОК			
	wledge the Impor	t message. Click on th	ne Landi	button a	nd then click	on the 🎑 to exi
knc	medge the impor	Children of the children of the				
knc						
	on the	button to close the				
ck c	Exit	button to close the				

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 Slide Data

7.

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

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

Connect Disconnect Access Registration	•					
New Open Close	Ctrl+N Ctrl+O		Open Slide I	Data File		?
Import / Export ASCII Export Backup	F F	Import Log / Well Export Log / Well Import / Export LAS •	Look in: 🗀	pian.cdm	schlum.cvm	 Øs
Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Ctrl+P	Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import	Norwest la Norwest la Norwest m NORWEST	b data.xls apping file.cdm .dsm	E slide 1.txt Slide sheet 2850-fix.csv slide.txt statoil.dsm statoil.dsm	
Exit Survey Viewer		Import Dip Meter Import MDT Import Slide Rotate	Kile name:	slide.txt		Open
		Export INI Settings File Import INI Settings File	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 **Upen** 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
	Example seq <column-break>tvd<column-break>ssk<column-break>hp before<c< th=""><th></th><th>Example seq.md.tvd.ssl.hp<column-break>before.hp<column-break>after.fp.efw.temp.mob.formatic</column-break></column-break></th></c<></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>
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 Slide Import Options window shown below.

Silde Import Options	
	OK
Degree Orientation Settings	Cance
Indicate the format of Degree Orientation	
Numeric (-150*)	
Verbal (150° L)	
Verbal Field Settings	
Fields are merged (150L)	

4. The user must have some knowledge of the slide data as far as the Tool face orientation is concerned. Select the appropriate data format for the Tool face data by click on the appropriate Radio Button and then click on the UK button. This will activate the Slide Rotate Data Import window shown below.

3			
Open File	Open Mapping File	Save Mapping File to the corresponding field Field Top Depth Base Depth Tool Face *	Clear All Mapping
Column 7 Column 8 Column 9 Column 10 Column 11 Column 12 Column 13 Column 13 Column 15 Column 15 Column 16		nport	
Edit Data File ample portion of file 3360,2365,5,5,5,45,Gravity,920,6,9 3375,23379,4,45,Gravity,920,6,9 379,2387,7,8,7,0,Gravity,920,6	000,0,2206.18,2206.34		
2388.7,2393.7,5,0,Gravity,930,1 2406,2408,2,0,Gravity,930,10,10 2412,2417.5,5.5,0,Gravity,930,1	0,10400,3700,2206.6,2206.67,2388.82,89.07,7 1400,3700,2206.75,2206.77 0,10400,3700,2206.79,2206.82 0,10400,3700,2206.89,2206.93	5.14,2206.6,3.63,1.11,3.79	
			Exit

Overview of the window.

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

Open File

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

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

Save Mapping File Button allows the user to save the mapping between data columns in the Slide data file to database fields in the Slide 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 slide data file to database fields in the Slide 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 Word pad 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 Slide data.

A Slide / Rotate Layer should already have been added through the Log configuration builder so that the user can see their imported Slide 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.

lide Data Import slid	e sheet 2850-fix.csv				Þ
ile					
Open File	Open Mappi	ng File	Save Mapping File		Clear All Mapping
Click and Drag with the Left N	Mouse button. Drag the columns of th	he data file over t	o the corresponding field		
Data Column		~	Field	Mapped Column	
Column 1			Top Depth	Column 1	
Column 2			Base Depth	Column 2	
Column 3			Tool Face *	Column 4	
Column 4					
Column 5					
Column 6					
🗆 🎇 Column 7		= Imp	ort		
🗆 🎇 Column 8					
🗆 🎥 Column 9					
🗆 🎇 Column 10					
🗆 🎥 Column 11					
🗆 🎆 Column 12					
🗆 🎆 Column 13					
🗆 🎆 Column 14		_			
🗆 🎆 Column 15					
🗆 🎥 Column 16		~	<		>
Edit Data File	Reload Data File				
Sample portion of file					
2360,2365.5,5.5,-45,Gravity, 2375,2379,4,-45,Gravity,920	,920,6,9000,0,2205.33,2205.66				<u>^</u>
2379,2387.7,8.7,0,Gravity,9	20,6,10000,0,2206.34,2206.58				
2388.7,2393.7,5,0,Gravity,9	30,10,10400,3700,2206.6,2206.67,2	2388.82,89.07,75	.14,2206.6,3.63,1.11,3.79		
2406,2408,2,0,6 ravity,930,1 2412 2417 5 5 5 0 Gravity 9	0,10400,3700,2206.75,2206.77 30,10,10400,3700,2206.79,2206.82				
2429.5,2433.5,4,0,Gravity,9	30,10,10400,3700,2206.89,2206.93				
2458,2463,5,-10,Gravity,930),10,10400,3700,2207.36,2207.48				~
<					>
					Exit

- 3. The user can save this mapping procedure at this time by **clicking** on the **Save Mapping 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
5.	Acknowledge the Import message. Click on t	he DK button and then click on the X to exit or
	click on the Exit button to close the	

How to Import Slide Data with an Existing mapping file.

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

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

	Open Slide Data File
	Image: Section of the section of t
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 © Comma TAB Space Example © Comma TAB Space Example seq column-break>indicolumn-break>iskcolumn-brea
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 Slide Import Options window shown below.</column-break>
	Silde Import Options
	Degree Orientation Settings Cancel Indicate the format of Degree Orientation C C Numeric (-150°) Image: Verbal (150° L) Verbal Field Settings Verbal Field Settings Image: Verbal (150L)
4.	The user must have some knowledge of the slide data as far as the Tool face orientation is concerned. Select the appropriate data format for the Tool face data by click on the appropriate Radio Button and then click on

the **DK** button. This will activate the Slide Rotate Data Import window shown below.

Open File	Open Ma	pping File	Save Mapping File	Clear All Mapping
ck and Drag with the Left Mous	e button. Drag the columns o	of the data file over		
Jata Column Column 1 Column 2 Column 3 Column 4 Column 5 Column 7 Column 10 Column 11 Column 13 Column 15			Field Top Depth Base Depth Tool Face *	Mapped Column
∃‱ Column 16 dit Data File	Reload Data File	~	<) [
mple potion of file 300,2365,5,5,5,45,Gravity,920, 375,2379,4,-45,Gravity,920,6, 379,2387,7,8,7,0,Gravity,920,6 388,7,2333,7,5,0,Gravity,930,11 406,2408,2,0,Gravity,930,11 422,547,25,5,0,Gravity,930,12 423,5,2433,5,4,0,Gravity,930,110,	6 9000 0.2205 33 2205 66 100,0,2206 18,2206 34 10000,0,2206 34,2206 58 10400,3700,2206 6,2206 6 400,3700,2206 75,2206 77 10400,3700,2206 89,2206	82 93	5.14,2206.6,3.63,1.11,3.79	

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

Slide Data M	apping File		? 🔀
Look in: 🗀	DEMO		* 💷 *
imperial Fil Jen for Cal LAS Wrapp photos slides.sld	gary		
File name:	slides.sld		Open
Files of type:	Slide Data Map files (*.sld)	•	Cancel

6. Select the mapping file with the ***.sld** saved from previous imports of similar Slide data files to your slide table by highlighting the file and **clicking** on the **Den button** or double clicking on the file name. Once the file

highlighting the file and **clicking** on the **current mapping configuration** as shown below.

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

7. 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.

[Slide Data Import sli	de sheet 2850-fix.csv				E
	File					
	Open File	Оре	n Mapping File	Save Mapping File		Clear All Mapping
	Click and Drag with the Left	Mouse button. Drag the colu	imns of the data file over			
	Data Column			Field	Mapped Columr	
	Column 1			Top Depth	Column 1	
	Column 2			Base Depth	Column 2	
	Column 3			Tool Face *	Column 4	
	Column 4				Column 4	
	Column 5					
	Column 6					
	Column 7		≡ Imp	port		
	Column 8					
	Column 9					
	Column 10					
	Column 11					
	Column 12					
	🗆 🎇 Column 13					
	🗆 🎇 Column 14		_			
	🗆 🎇 Column 15					
	🗆 🎇 Column 16		~	<		>
	Edit Data File	Reload Data File				
	2375,2379,4,45,Gravity,92 2379,2387,7,8,7,0,Gravity,9 2388,7,2393,7,5,0,Gravity,9 2406,2408,2,0,Gravity,930, 2412,2417,5,5,5,0,Gravity,9 2429,5,2433,5,4,0,Gravity,9	9,920,6,9000,0,2205,33,220 0,6,9000,0,2206,18,2206,34,2206 320,6,10000,0,2206,34,2206 330,10,10400,3700,2206,6,2 10,10400,3700,2206,75,220 330,10,10400,3700,2206,79 300,10,10400,3700,2206,89 0,10,10400,3700,2207,36,22	58 206.67,2388.82,89.07,75 6.77 2206.82 2206.93	;14,2206.6,3.63,1.11,3.79		
	<					>
						Exit
k on	the Import but	t on . After the da	Database Mess	age	prompted wit	h a system m
	ledge the Import		on the L	button and	then click or	the 🞑 to e
k on	the	button to close	e the Window.			

Export INI Settings

This will allow the user to export all the user's favorites' lists, the placement of the toolbars, window placements and default settings for another user to import to have all the settings the original user has set up.

Exporting INI Settings

 To access the INI Export window, click on Import / Export under File to activate the pop-out menu and then select Export INI Settings. This will activate the Export INI Settings file window as shown below and tells you the folder it has been saved into as IBF file extension.

File Connect Disconnect Access Registration New Open Close	Ctrl+N Ctrl+O	-	
Import / Export ASCII Export Backup	Þ	Import Log / Well Export Log / Well Import / Export LAS ►	Power*Log
Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup		Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import Import Dip Meter	INI Settings exported to C:\PowerSuite_V12\\INI.IBF
Exit Survey Viewer		Import MDT Import Slide Rotate	
		Export INI Settings File Import INI Settings File	

Import INI Settings

This will allow the user to import all the user's favorites' lists, the placement of the toolbars, window placements and default settings from another user who has exported this file and to have all the settings the original user has set up.

Importing INI Settings

1. To access the INI Import window, click on **Import / Export** under **File** to activate the pop-out menu and then select **Import INI Settings**. This will activate the Open INI Backup file Settings file window as shown below.

File					
Connect Disconnect		Open INI Backup File	: (*.IBF)		? 🗙
Access Registration	_	Look in: 🗀 PowerSuite	∍_V12		* 💷-
New Ctrl+N Open Ctrl+O Close		Backup Database	EPORTI	SYSLOG_CO	
Import / Export ASCII Export Backup	Import Log / Well Export Log / Well Import / Export LA5 •	COGO PowerCurve-Floating	CReportmi	C SYSLOGI_C	:ORE
Print Log Ctrl+P Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Import Surveys Export Surveys Import AGS Data Import Core Data ASCII Import	File name: INI.IBF	SYSLOG		Open
Exit Survey Viewer	Import Dip Meter Import MDT Import Slide Rotate	Files of type: IBF files (*	ibf)	-	Cancel
	Export INI Settings File Import INI Settings File				

2. Select the file that has been exported and click on the button. This will result in a system message that the file has been imported successfully as shown below.



ASCII Export

ASCII Lithology Export

This utility will create ASCII files, or comma delimited files of certain lithology data types (other than curves) for any well in the database. The utility can create a single file of the chosen data categories or multiple files with the same file name entered and their own file extensions. The file types and file extensions are listed at the end of this section.

lie					
Connect					
Disconnect					
Access Registration	•	•			
New	Ctrl+N				
Open	Ctrl+O				
Close					
Import / Export	,	5			
ASCII Export	•		ASCII Lithology Export	•	System Format
Backup		1	Slide / Rotate Export		Landmark Format
Print Log	Ctrl+P	1	Export ASE Format		CNRL Format
Print Morning Report	Cultr	Τ			Total Format
Print Well End Report					
Print Reports to Word®					
Print Setup		_			
Exit					
Survey Viewer					

The first step in creating an ASCII or comma delimited file(s) is to select **ASCII Export** from the **File** menu selection. Then, select **ASCII Lithology Export** from the ensuing pop-out menu. Then, select the file format you wish to export the data into. We have tailored our ASCII files to be compatible with Landmark. This will

Kong Ascil Lithology Export V 12.0	X
System Select Output Format	
Choose Well ABC Oil Anywhere 12-25	
Choose File C:\Documents and Settings\R.W. Sephton\My Document	ts\ABC Oil An
Select Categories	
All Bedding Cartacts Clear Cathonate Texture Matrices Cathonate Textures Care Box Das Core Becoiptions (Long Form) Core Reports	
Export AI Diagenesis - NBR Do Meter Data Energy Change Fractures Fractures Fractures	~
Make File 🔽 Save as multiple files	
	Exit

- 1. The user can select the file format for the ASCII Lithology export by clicking on the Select Output format arrow and selecting the file from the output list. This will place your selection in the file format field.
- 2. Click on the **Choose Well** button to activate the Well list window. This will activate the **Well List** window.

ABC Oil Anywhere 12-25 [ABC Oil 12-25-45-12]	Query
ABC et al Anywhere [100121301212W500] ABC 0il Anywhere 12:25 [ABC 0il 12:25:45:12]	Select
Anybody et al Basing Sidetrack (101123502312 Anyone Enchant (100041001416W400) C0C (C0N) conoco 12-12 (100121201314W400)	Clear Field Cancel
Core Log [Core Log DS] Core Log with new Tracks [100121201312w50 fred [fred] fred [fred]y]	Gancor
FRED 4-22 HZ Gilby 13-22 [13-20-38-3 W5M] Jasper I-75 [Jasper I-75] Jasper Spirit River [100102607707W600] new [100121401203W600]	
Otter Dodsland 10-34-31-18W3 [141103403118 Otter Dodsland 6-22-32-19W3 [131062203219V Senior et al Lovett River 1-32 [100013204620W	
Startech Tatagwa 4A9-33/3B1-33-6-15W2 [191 SYSTEM METRIC [SYSTEM (M]] Tutorial Core Log [100141901223W500]	
Tutorial Well [100143206323W500] Whonose Basing [100113503417W400]	
]	

3. Select the well by double clicking on the Well Name / UWI that you wish to make a Lithology ASCII dump for.

The user can also click on the Well Name / UWI to highlight it and then **click** on the **Select button**. This selection will then be populated in the Well field in the Log Dump window.

4. Click on the **Choose File:** button and this will activate the **Choose filename** window.

Choose filename		? 🛛
Save in: SEPHTON (C:)	• ÷ È	💣 🎫
CASCIITOLAS	🛅 Matrix symbols	⊡ PC
Cardfile	🚞 Maximizer	🚞 Pro
C DEMO	Cid wells	DPV 🗀
Cocuments and Settings	🚞 oracle	Dpv
Graphics	plsqldev50	🗀 sql
🛅 IDAPI	POWERCORE	🗀 To
<		>
File name: ABC Oil Anyw	here 12-25	Save
Save as type: CSV files (".cs	v) 💌	Cancel

5. Type in a file name and select the drive and directory you wish the file(s) to be exported to. Then, **click** on the

button. This will fill in the Choose file field in the Log Dump window with the drive, directory and file name.

6. Select the data types you wish to populate your ASCII lithology export file(s) with by clicking on them once to make them highlighted. The user can deselect the data types by clicking on them again. Also, the user can click

on the **button** to select all the data categories or **click** on the **button** to clear all your selections.

If you want only one data type in each file created click on the Save as multiple files check box . If deselected or unchecked the dump will populate a single file.

📕 ASCII Lith	ology Export V 12.0	×
	System Select Output Format	
Choose Well	ABC Dil Anywhere 12-25	Ĩ
Choose File	C:\Documents and Settings\R.W. Sephton\My Documents\ABC Oil An	1
	Select Categories	
All Clear	Bedding Contacts Antonio Control Contr	
Export All	Diagenesis Diagenesis - NBR Dip Meter Data Energy Change Fractures Fractures - NBR	
Make File	Save as multiple files	
	Exit	

N.B. If the user wishes to export all the wells in your database at one time you must first create a folder to accept the			
ASCII file dump and then click on the	Export All	button.	

8. **Click** on the **Make File button** to initiate the export. This will activate a System Message.



- 9. Click on the **OK** button to acknowledge the message.
- 10. Click on the **Exit** button to escape the Log Dump window or repeat steps 3-6 to create another set of ASCII Data Files.

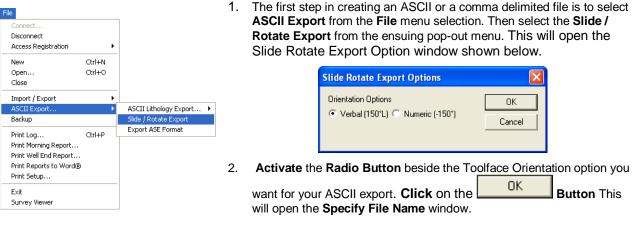
List of multiple files exported if file name that was used was dump

Bedding Contacts	dump.bdc
Carbonate Texture Matrix	dump.cbm
Carbonate Texture	dump.cbt
Core Box Data	dump cbx
Diagenesis	dump dg1

Slide / Rotate Export

4.

This utility will create an ASCII file, or a comma delimited file for the slide rotate intervals of the log / well that is active at the time of the export.



3. Type in a file name (without extension) and select the drive and directory you wish the file to be exported to.

Then **click** on the **button**. This will activate a System Info – Slide / Rotate Extract window. The System Info – Slide / Rotate Extract Window will notify you that a file called (file name from step 2) will be

create in directory (directory specified in step 2). Do you wish to proceed? **Click** on the **weak and the step 2** button to initiate the export.

5. The file will be found in the location where was directed and can be opened in notepad / wordpad or into an Excel spreadsheet.

Export ASE Format

This utility will create dbl files, or comma delimited files of certain lithology data types (other than curves) for any well in the database. The utility can create a single file of the chosen wells or multiple files with the file name resulting from the well names.

1. The first step in creating a dbl file format is to select ASCII Export from the File menu selection. Then, select

Export ASE Format from the ensuing pop-out menu or by utilizing the Export DBL icon on the toolbar. This will activate the DBL Export window.

File		DBL Export	
Connect Disconnect Access Registration New Ctrl+N Open Ctrl+O Close Import / Export		Select Wells for DBL Export 2005-03-09 2005-03-23 ABC COMPANY ABC Oil Anywhere 12-25 ABC Oil Anywhere 12-25 Albian Sand Template Anybody HZ Gauthier 12-31 ST1 Albian Sand Template Anybody Dil and Gas	Clear All Select all Export DBL
ASCII Export	ASCII Lithology Export	Anyone Enchant	
Backup Print Log Ctrl+P Print Morning Report Print Well End Report Print Reports to Word®	Slide / Rotate Export Export ASE Format	Aramco Carbonate Template ASE051058L0G ASE051093 ASE06-1002 ASE06-1002-org	216 216 216 216 216 216 216 216 216 216
Print Setup Exit Survey Viewer		Choose a folder or file to save to.	Exit

- 2. Click on the Well Names to highlight or activate the Wells in the list. Click on them again to deselect from the list. Hold down the Shift key to access multiple wells or the CTRL Key to single out wells.
- 3. Click on the **button** and this will activate the Save DBL Export File window.

Save DBL Ex	port File	?	K
Save in: 🔯	Albian	· ← È 💣 II-	
Albian Logs	; RE_EXPL.dbl		
File name:	ase20-34,dbl	Save]
Save as type:	DBL Export Files (*.dbl)	▼ Cancel	

4. Type in a file name and select the drive and directory you wish the file(s) to be exported to. Then, **click** on

the **button**. This will fill in the field in the DBL Export window with the drive, directory and file name.

- 5. If you want only one well per file created click on the Multiple files check box . If deselected or unchecked the Export will populate a single file.
- 6. **Click** on the **Export DBL button** to initiate the export. This will activate a System Message.



- 7. Click on the **OK** button to acknowledge the message.
- 8. **Click** on the **Exit button** to escape the Export DBL window or repeat steps 2-7 to create another set of DBL Data Files.

Backup

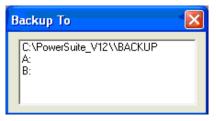
Power*Log / Core & Curve™ allows you to create a backup file of your active well or any other well you choose.

Creating a Backup of a Well...

File

Connect	
Disconnect	
Access Registration	+
New	Ctrl+N
Open	Ctrl+O
Close	
Import / Export	Þ
ASCII Export	+
Backup	
Print Log	Ctrl+P
Print Morning Report	
Print Well End Report	
Print Reports to Word®	
Print Setup	
Exit	
Survey Viewer	

1. With the well open at the time, **Click** on **Backup**, under the **File** menu selection, to activate the **Backup To** window.



- Select the directory to which you wish to send your backup file: The C:\Powersuite_V12\Backup directory is created by Power*Log / Core & Curve™ for the backup files, while the A:\ and B:\ drives represent the floppy drives on your computer.
- 3. Click on any one of the directories to activate the Export window shown.

Power*Log Data Transfer: Export V 12			
Well ABC Oil Anywhere 12-25 UWI: ABC Oil 12-25 V Log Configuration V Entire Well	Image: Stress of the stress		
Today's Interval O to O Homming Report Export Interval Interval Base	Go to Import ad Data: All None Record Based Data: All None		
Image: Constraint of the second se	Core Curves escription Directional Survey Formation Multiple Array Test Dire Description Wireline Logging te Work Schedule ck Type (C) Curve Fills		
Backup All	Exit		

Notice that the **Export** window automatically activates the **Log Configuration** and the **Entire Well** check boxes More that all of your data is backed-up properly.

Note: If you had a log open and active, when you began the backup steps, please proceed to Step 7.

4. If you closed your log before exiting from Power*Log / Core & Curve™ and you wish to make a backup, you will

have to select a log and a well to back up. To do this, simply **click** on the **Log... button** to activate the **Open Log** window.

- 5. Then, **double click** on the **Available Log** you wish to back up and the **Export** window will be filled in accordingly.
- 6. Click on the <u>Start Export</u> button to begin the backup procedure. Note that the backup file will automatically be given a file name, based on the date and the number of times you have backed up wells in one day. The example shown in the **Export** window above is for May 5, 2000 and was the second backup of that day.
- 7. The following message then appears, "*Data has been exported successfully*." Click on the **button** to proceed.
- 8. Press the **Esc** key on the keyboard to exit from the **Export** window or **click** on the **Exit button**.

Print Log

Prints all or part of your log/well along with the Title page, location map, legends, survey views, 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: Adobe PDF	
		Title Page/Legend/Tops/Surveys Page Orientation:	Page Margin: 0.25
		Options Survey Views ✓ Strip Log Title Page ✓ EUB UWI Format Core Log Title Page ✓ Logo ✓ Defined ✓ User Defined ✓ Bore Hole Log Title Page ▼ TRIVISON.BMP	Print Methods C Default Meta File
		Cross Section Multi Views Location Map C:\PowerSuite_V12\Location maps\anywhere map_Page_1.	Color Options
		Title Page Remarks Horizontal Well	 Color Mono
		□ Legend	Interval per Page 55.88
	File Edit View Reports Options		Log Width:
	Connect Disconnect	Scale: 200 V V Header V Footer	10.50 ''
	Access Registration	User-defined Interval Today Section (0.00 to 0.00)	
	New Ctrl+N Open Ctrl+O	Well Section (140.00 to 526.00) Lithologu Section (140.00 to 1047.00)	
	Close	User-defined Interval: 140 to 526	
	Import / Export	Cores Scale: 10 V Header V Footer	Print
	Backup	580.00 - 598.00 2 Mar 6, 2001	Printer Setup
	Print Log Ctrl+P	1000.00 · 1012.00 1 Mar 7, 2001	Help
	Print Morning Report Print Well End Report		Exit
	Print Reports to Word®	✓ Formation Tops Print Quality: 300 ✓ ■	
	Print Setup Exit		
	Survey Viewer		
2.	fitle Page/Legend/Tops Page Orientation: legal lar	ndscape Select the appropriate paper orientation from	this drop box field
6		d Formation Tops will automatically conform to the selecte tation to choose from: letter portrait or landscape and leg	
		or portrait settings selected from within the Print Log windo	
-		ed in the printer's Properties window. Therefore, you must a Properties window to letter or legal landscape.	also modify the pape
		his check box V, if you wish to printout a full Well sight Vers	aion of the Title Dog
		printing the Striplog Title page and you are in Alberta t	
	should be selected.		
		VI printout from 100121605812W500 to 00/12-16-058 JWI formats remain the same.	-12W5/0 only on
5.	Core Log Title Page Activate t Fitle Page.	his check box \checkmark , if you wish to printout an abbreviated vers	ion of the Core Log
6.		te this check box⊠, if you wish to printout an abbreviated ∿	version of the Core
L	og alternate title Page.		
7.	Io	e this check box ^{IV} , if you wish to printout an abbreviated ve g Title Page.	ersion of the Sample
		g	
	TRIVISON.BMP		

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8. Activate this check box *if* you wish to printout a logo, and then select a logo from the **Logo** drop box field.

<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_V12\logo** directory.

- 9. Type any pertinent comments into the **Title Page Remarks** field and they will be displayed accordingly on the **Strip Log Title Page only**.
- 10. 🔽 Location Map ... C:\PowerSuite_V12\Location maps\anywhere map_Page_1.

✓ Location Map _____C. V owersute_v / 2 Cocation maps varywhere map_r age_1. Activate this check box ✓, if you wish to printout a location map following the title page, and then the user select a location map from

your computers drives by clicking on the and finding the file you want to print out as a location map.

<u>Note</u>: This must be a bitmap image file (*.bmp) if you want a location map to be printed out. Also, the bitmap image must be a square image, because **Power*Suite** will shrink or expand the image to fit the location map space following the **Title Page**. This bitmap can be placed anywhere as the file location is saved within the Power*Suite ini file.

- 11. Survey views Plan View Activate this check box , if you wish to have the plan view (view of the well bore from surface) printed out in the striplog header as captured in the Survey View application.
- 12. Survey views ✓ User Defined Activate this check box ✓, if you wish to have the user defined view (view of the well bore as manipulated by the user) printed out in the striplog header as captured in the Survey View application.
- 13. Survey views Azimuth View Activate this check box, if you wish to have the azimuth view (view of the well bore along the target azimuth) printed out in the striplog header as captured in the Survey View application.
- 14. Survey views Cross Section Activate this check box, if you wish to have the cross section view (view of the well bore at right angles to the target azimuth) printed out in the striplog header as captured in the Survey View application.
- 15. Survey views Multi Views Activate this check box , if you wish to have all the views printed out in the striplog header as captured in the Survey View application.
- 16. Legend Activate this check box , if you wish to have our entire legend printed out.
- 17. 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

- 18. Scale: 5 Scale: 200 Select or type in the Scale for the main log to be printed out at, in the Scale drop box field. It will show the inch scale if the Ratio Style Scales are not picked in the System Options Display Tab
- 19. Header Activate this check box I to have the track headers printed out with the main log.
- 20. 🔽 Footer Activate this check box 🗹 to have the track footers printed out with the main log.

21.	Core Accessories Activate this check
	User-defined Interval
	Today Section (6050.00 to 6140.00) Well Section (5990.00 to 6140.00) Lithology Section (6000.00 to 9223.00)
	Well Section (5990.00 to 6140.00)
	Lithology Section (6000.00 to 9223.00)
	User-defined Interval: 5990 to 6130

box I to have the core accessories printed out on the main log.
22. 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.

23. 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.

Note: 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

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

Note: 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. *

28. 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 💽 forces Power*Log / Core & Curve to use a raster or bitmap graphic printing

⊢ Prin	t Methods —
0	Default
•	Meta File

method. This printing method is generally used with Laser printers but not exclusively so. Activating the **Meta File** radio button **S** 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 🔄 forces Power*Log / Core & Curve to use the settings from the printer driver to printout the log. Color Options

Color Options		
0	Auto	
•	Color	
0	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 **S** 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.

Printer Setup... button to activate the Print Setup window and confirm that the correct printer 29. Click on the settings are in effect.

Note: 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.

- 30. 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.
- 31. 🗖 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

32. 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

Print Morning Report

Prints Morning Reports

Under the **File** menu selection, **click** on **Print Morning Report** or click on the **Morning Report button** on the **Toolbar** to activate the **Print Morning Report** window shown below:

File Edit View Reports Opt	ns Power*Log Report: Morning Report V 12
Connect Disconnect Access Registration	Output Destination: Disk File Format Printer Microsoft Word
New Ctrl+ Open Ctrl+ Close Import / Export	Wells ABC Oil Anywhere 12-25 (ABC Oil 12-25) Well End Report Clear All Clear Clear
ASCII Export Backup	Dates: All None Reports: All None 111\\REPORT\ps Feb 25, 1997 119 Summary & Lithology Printer Setup Feb 26, 1997 149 Total Gas Summary WMASTER2\HP Feb 27, 1997 264 Gas Chromatography Summary WMASTER2\HP
Print Log Ctrl+ Print Morning Report	Feb 28, 1997 398 Formation LaserJet 4100 Mar 1, 1997 512.5 Fm, Lith Sum, Total Gas Print Mar 2, 1997 512.5 Fm, Lith Sum, Chromatography Print
Print Well End Report Print Reports to Word® Print Setup	Mar 3, 1997 654 Mar 4, 1997 738 Mar 5, 1997 866 Mar 6, 1997 974 Mar 7, 1997 1037
Exit Survey Viewer	Mar 8, 1997 1037 Mar 9, 1997 1037 Mar 10, 1997 1037

Printing Morning Reports...

- Select the printing destination from the Output field (in the upper left corner of the Morning Report window), drop box arrow: Printer, Preview, or Disk File. The Preview option allows you to see what your report looks like <u>before</u> it is printed. Note, however, that the Preview option will only preview one report at a time. Accordingly, when you wish to preview a specific report, please be sure that no other reports are selected / highlighted.
- 2. If printing to a **Disk File** (on your hard drive or to a floppy diskette), select the file format from the **Disk File Format** field drop box arrow
- 3. Click on ______ and a Save As window will pop up. Type in the in a five (5) character (or less)

filename and click on the **Save** button. Power*Log / Core & Curve [™] will then attach an extra two (2) characters to the end of your filename to create a seven (7) character filename--preceding the standard three (3) character file extension. The two (2) characters added by Power*Log / Core & Curve [™] on to the end of the five (5) characters you have typed in are used as a reference by Power*Log / Core & Curve [™] to distinguish which reports are to be included in the files you are creating. Finally, the standard three (3) character file extension following the dot or period, will be selected according to the file format you selected in the Disk File Format field, e.g. MS Word documents will use the .DOC file extension.

For example, if the five (5) characters you chose for a file name were "*Trial*" and you chose to print all **Morning Reports** with multiple days (and your **Disk File Format** was **MS Word**), you would end up with the following six (6) files:

TRIALLT.DOC	Summary and Lithology Report
TRIALTG.DOC	Total Gas Summary Report
TRIALGS.DOC	Gas Chromatography Summary Report

TRIALFM.DOC	Formation Report
TRIALSC.DOC	Formation, Lithology Summary and Chromatography
TRIALSG.DOC	Formation, Lithology Summary and Total Gas

Note: You can then use a word processor, like MS Word, to access these files.

Wells...

4. Select a Well that includes your Morning Report(s) by clicking on the button and then double click on the desired Well from the ensuing Well List window. Please note that you may select numerous Wells, from the Well List window, for printing. Once you have selected your Well(s), you will then be returned to the Morning Report window.

<u>Note</u>: Only <u>one</u> well can be printed at one time, but you may print multiple days and reports for a single well all at once.

**Only the selected/highlighted wells and their selected/highlighted reports will be printed. **

To highlight a Well, click on it once. To remove a Well from the Well List field, highlight the Well and click on the

Clear button. To remove all of the **Wells** from the **Well List** field, click on the **Clear All button**. Note that these buttons will not remove any of the **Wells** from the database. These buttons will only remove the **Wells** from the list of **Wells** currently available for printing.

5. Highlight the appropriate Morning Report (listed by Date), and the related reports that you wish to print. You

may click on the **button** to print all of the **Morning Reports** from that **Well**. Conversely, to deactivate all of

the Morning Reports, simply click on the **None** button.

6. Click on the Report Format. button to activate the Report Format window.

Report Format		
Format: [TV]		•
	OK	Cancel

Using the **Format** field drop down arrow, click on the style of **Report Format** that you wish to use. Then, **click** on the

button, when you are finished.

<u>Note</u>: Report Formats are useful, when you are printing reports for various clients, who prefer specific Report Formats. The formats store reports in their own directories, which Power*Log / Core & Curve ™ refers to when you choose to print reports in the specific formats.

7. **Click** on the **Printer Setup... button** and then select the 8.5" x 11" Portrait paper size.

8. Click on the Print button in the main window.

Formation Tops are <u>automatically</u> created in a Morning Report, if the depths specified fall within the range of the Morning Reports, two days prior to the day of printing. In order to have the Formation Tops printed, you must enter data into at least two Morning Report Date and Depth fields, prior to printing. Power*Log/Curve[™] searches for the Depth information to locate the Formation Tops it should include for the Date selected.

** The Well End Report button will take you to the Well End Report window.**

<u>Note</u>: When you exit from the **Print Morning Report** window, you will be asked if you want to save the print configuration. If you click on **Yes**, the program will remember every setting that you made to the window and will default to these settings the next time you enter the window.

Print Well End Report

Prints the reports for the end of a well

File Ed Conn Disco

Under the File menu selection, select Print Well End Report or click on the 🛅 Well End Report button on the Toolbar to activate the Print Well End Report window shown below:

		Power*Lo	g Repor	t: Well End Report V	12			
		Output Preview	•	Disk File Format Microsoft Word	V	Last Directory		
Edit View Reports	Options	Prepared.	· For:					Goto Morning Rep
Connect Disconnect Access Registration	•	Vells Clear All Clear	By: ABC Oil A	Anywhere 12-25 (ABC Oil 1	2-25)			Report Format. C:\PowerSuite 11\\REPORT\
New Open Close	Ctrl+N Ctrl+O	Reports:	Title Page Well Abst Well Sum Daily Drilli Casing St	tract Imary ing Summary				Printer Setup \\MASTER2\H LaserJet 4100
Import / Export ASCII Export Backup	>	None	Bit Recor	rd Summary (IADC) rd Summary (TBG) rds gs				Print Exit
Print Log Print Morning Report Print Well End Report	Ctrl+P		Logging F Test Rep Directiona	iorts al Surveys	leader			Sample Description
Print Reports to Word® Print Setup			Deviation Master St	ment Plugs				Table of Contents only Start Printing at.
Exit Survey Viewer			Work Sch Formation Formation	hedule				Page #: 1 Page Number Format Page and Section #
				escriptions w/ Formation [*] Cores ns	ops		•	C Named Sections - Paginate Options C Paginate Start Page Numbering @ C No Page Numbering

Printing a Well End Report...

1. Select the printing destination from the Output field (in the upper left corner of the Well End Report window), drop box arrow: Printer, Preview, or Disk File. The Preview option allows you to see what your report looks like before it is printed. Note, however, that the Preview option will only preview one report at a time. Accordingly, when you wish to preview a specific report, please be sure that no other reports are selected / highlighted.

Note: To select or configure a specific printer, click on the	r Setup button.
---	-----------------

- If printing to a Disk File (on your hard drive or to a floppy diskette), select the file format from the Disk File 2. Format field drop box arrow
- Print 3. Click on button and a Save As window will pop up. Type in a filename and click on the button. Power*Log / Core & Curve™ will then attach an extra two (2) characters to the end of your filename-preceding the standard three (3) character file extension. The two (2) characters added by **Power*Suite™** on to the end of the filename that you have typed in are used as a reference by **Power*Suite™** to distinguish which reports are to be included in the file you are creating. Finally, the standard three (3) character file extension following the dot or period, will be selected according to the file format you selected in the Disk File Format field, e.g. MS Word documents will use the .DOC file extension.

Note: The Rich Text File currently gives you the best formatting. We have a separate directory in reports especially formatted for RTF reports that can then be opened in word.

Below is a list of two (2) character file name additions that Power*Log / Core & Curve™ uses to identify different reports. For this example, a File Name of "Trial" with an MS Word Disk File Format will be used:

Report Name	File Output Name	Report Name	File Output Name
Title Page	trialtt1.doc	Well Abstract	trialwa1.doc
Well Summary	trialws1.doc	Daily Drilling Summary	trialdr1.doc
Casing Strings	trialcs1.doc	Bit Record Summary (IADC)	trialbs1.doc
Bit Record Summary (TBG)	trialbd1.doc	Bit Record Summary	trialbr1.doc
Core Descriptions	trialcd1.doc	Core Description / Report Core Header	trialct1.doc
Logging Reports	triallg1.doc	Test Reports	trialts1.doc
Directional Surveys	trialsv1.doc	Directional Survey Points	trialsp1.doc
Deviation Survey Points	trialds1.doc	Master Survey Group	trialmg1.doc
Mud Data	trialfI1.doc	Abandonment Plugs	trialpg1.doc
Formation Tops	trialtp1.doc	Work Schedule	trialwk1.doc
Sample Descriptions	trialst1.doc	Formation Evaluation	trialfm1.doc
Sidewall Cores	trialsw1.doc	Sample Description / Tops	trialfs1.doc
Core Plugs	trialcp1.doc	MDT Run	trialmdt1.doc
Geology Dictionary	trialgd1.doc	Table of Contents	trialtc1.doc

4. Select a **Well** for printing by clicking on the **Well... button** and then double **click** on the desired **Well** from the ensuing **Well List** window. Please note that you may select numerous **Wells**, from the **Well List** window, for printing. Once you have selected your **Well(s)**, you will then be returned to the **Well End Report** window

Note: Only the selected / highlighted wells and their selected/highlighted reports will be printed**

To highlight a Well, click on it. To remove a Well from the Well List field, highlight the Well and then click on the

Clear All button. To remove all **Wells** from the **Well List** field, **click** on the **Clear All button**. Note that these buttons will <u>not</u> remove any of the **Wells** from the database. These buttons will only remove the **Wells** from the list of **Wells** currently available for printing.

5. Select/highlight and/or deactivate any of the reports in the **Reports** field by clicking on them once. To

select/highlight all of the reports, **click** on the **button**. To deactivate all of the reports, **click** on the **None**

button.

Note: Daily Drilling Summary Report Update... If your Daily Drilling Summary Report is not up-to-date or is missing Progress and Average P.R. (Penetration Rate) data you must select Print Morning Report under File on the Selection Bar. This will activate the Print Morning Report window, then exit from the Print Morning Report window (without performing any tasks), and return to the Well End Report window to printout your newly updated Daily Drilling Summary Report.

6. If you are printing **Sample Descriptions**, you may print all or a portion of the descriptions. To print all of the intervals, activate the **All** check box ✓. To print specific intervals only, enter the start and end points, i.e.

Measured Depth intervals, in the appropriate interval fields and then deactivate the **All** check box

7. If you are printing the **Title Page**, **click** on the **Prepared... button** and fill in the required information. This information is only used on the **Title Page** of the report.

<u>Note</u>: In order to have the **Formation Evaluation Report** printed out, there are two fields that must be filled in on your **Well Formation** window. These are the **Boundary Type** field and the **Period** field. If these two fields are left blank, the **Formation Evaluation Report** for that **Formation** will <u>not</u> be printed out.

8.	Click on the	button to activate the Report Format window shown below:

Report Format		
Format: [ps]		•
	OK	Cancel

Decest Fee

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9.	Using t	he Format fie	eld drop down arrow, click on the style of Report Format that you wish to use. Th	nen, click
	on the	OK	button, when you are finished.	

Note: Report Formats are useful when you are printing reports for various clients, who prefer specific Report Formats. The formats store reports in their own directories.

10. If you only want to printout a Table of Contents, activate the Table of Contents Only check box 🗹 and then make sure that the reports you want to include on the Table of Contents are selected/highlighted.

Note: You can start printing at any page by typing the page number in the Start Printing at Page # field.

- 11. The user has a choice of paginating by section number (18 1, 2, 3 etc), or paginating by section name (Sample Description - 1, 2, 3 etc). The Table of Contents will reflect these choices if you print the table of Contents with all the reports at the time of printing.
- 12. The user also now has the choice of paginating the reports continuously pages 1 infinity, and with this option you can also use the start printing at page # option.
- Printer Setup... button and then select the 8.5" x 11" Portrait paper size. 13. Click on the
- Print 14. Click on the button.

** The Morning Report

button, in the upper right corner of the Print Well End Report window, will take you to the Print Morning Report window. **

Note: Upon closing the Print Well End Report window, you will be asked if you want to save the print configuration. Yes button, the program will remember every setting that you made to the window and will If you click on default to these settings the next time you enter the Print Well End Report window.

Print to Preview

- 1. In the Print Well End Report or Print Morning Report windows, select "Preview" from the Output field drop box in the upper left corner of the given window.
- Select the report you wish to preview by clicking on it and the report will then be highlighted. 2.
- Print button and you will be launched into the Print Preview mode, where you will see 3. Click on the your report displayed on screen exactly as it will look when it is printed.

Note: You can only preview one report at a time. If numerous reports are highlighted, only the first one on the list will be previewed. Also, you can only printout one report at a time from within the preview mode.

When in the **Preview** mode, you have some tools available to you at the bottom of the screen.

100%

This is the **Zoom** text field. It allows you to zoom in and out of the report to display it in different sizes.

This is the **Print** button. Click on this button to print your previewed report to paper.

This is the **Export** button. It lets you reproduce the report to another file format.

To exit from the **Preview** mode without printing, simply click on the **Close** button at the bottom of the **Print Preview** window.

You are able to view multiple page reports by using the navigational tools(similar to the Database Navigational Tools), at the lower left side of the Print Preview screen:

First Page	M	

One Page Forward

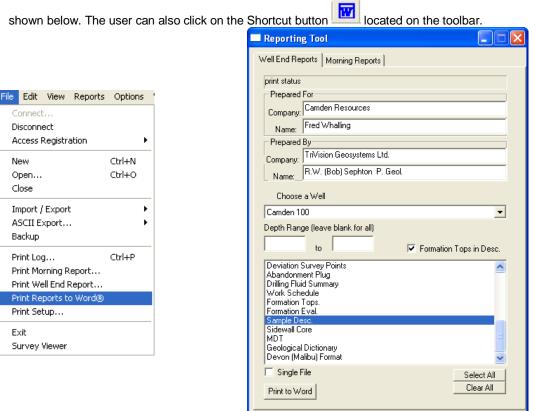
Last Page 🕨

One	Page	Backward	∢

Print "Well End and AM" Reports to Word Format

This printing method has been implemented to facilitate the printing of the Geological reports to a different format other than the Crystal Reports generated to this point in time. Most of the reports are very similar but are not just text fields that our users have had some problems with when they are printed to word format. This new generation of reports should be easily formatted to their particular reporting format.

1. Click on Print Reports to Word, under the File menu selection, to activate the Print Reports to Word window



Overview of Well End Reports Tab Window

- Prepared	For				
Company:	Camden Resources	١			
Name:	Fred Whalling				
Prepared By					
Company:	TriVision Geosystems Ltd.				
Name:	R.W. (Bob) Sephton P. Geol.				

Prepared for Fields are to be filled in for the Title page report. Type in the Company Name you are working for in the company field and the Person's name you are working for or is receiving the reports in the Name field

Name: R.W. (Bob) Sephton P. Geol. Prepared by Fields are to be filled in for the Title page report as well. Type in your Company Name in the company field and your name in the Name field

Choose a Well Camden 10	0	This field defaults to the well that is
open when you enter into database.	his application. The user can utilize the dr	op arrow to pick any well they have in their
Depth Range (leave blank fo		e to print a portion or depth interval of the as Devon Malibu Format Moring Reports. Leave
Formation Tops in Desc.	Activate this check box if you want to inclu Descriptions report.	ude the Formation tops in the Sample or Core

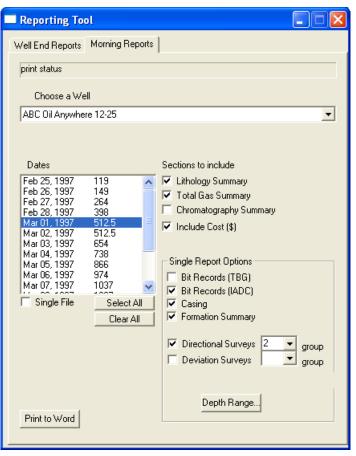
Deviation Survey Points Abandonment Plug Drilling Fluid Summary Work Schedule Formation Tops. Formation Eval. Sample Desc. Sidewall Core MDT Geological Dictionary Devon (Malibu) Format	This field gives the user to identify which well end reports they would like to print and they can also identify multiple reports to print at once. Click on the report name to activate or highlight the report to be printed and Click again to deactivate the report. Scroll through the list to identify which reports you wish to print.					
Single File Activate this check box if you wish to print multiple reports to a single file. Or conversely deactivate this check box if you want multiple files created.						
Select All This button will highlight / select all the reports and you can activate the reports you do not wish to print.						
Clear All This button	will dehighlight / deselect all the reports and you can activate the reports you wish to print.					
	n will activate the printing process and create either single or multiple files. The documents II be Document 1 Document 2 etc.					
How to Print Well End Reports to Word Format.						
4 Click on Drint Donort	to Word, under the File menu extention, to estimate the Drint Departs to Word window					

1. Click on Print Report to Word, under the File menu selection, to activate the Print Reports to Word window.

The user can also **click** on the shortcut **button** located on the toolbar.

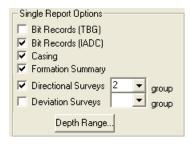
- 2. **Choose** the **well** you wish to create a report for from the selection box if the default well is not the one you want to print.
- 3. Highlight the reports you wish to print in the **Reports** field by clicking on them once. To select/highlight all of the reports, **click** on the <u>Select All</u> button. To deactivate all of the reports, **click** on the <u>Clear All</u> button. . If you are printing sample or core Descriptions select if you wish to print tops or all the descriptions.
- 4. **Click** on the **Print to Word button** to create the reports. This will activate your copy of MS Word application and you can view, customize and save these reports.

Overview of Morning Reports Tab Window



Choose a Well
ABC Oil Anywhere 12-25

Dates		
Feb 25, 1997	119	1
Feb 26, 1997	149	F
Feb 27, 1997	264	
Feb 28, 1997	398	
Mar 01, 1997	512.5	
Mar 02, 1997	512.5	
Mar 03, 1997	654	
Mar 04, 1997	738	-
Mar 05, 1997	866	
Mar 06, 1997	974	
Mar 07, 1997	1037	-
1.1 00 1007	1007	1.00



This field defaults to the well that is open when you enter into this application. The user can utilize the drop arrow to pick any well they have in their database.

This field gives the user the ability to identify which Morning reports date they would like to print. The user has the ability to print one or more report dates. Select or deselect them by clicking on them once.

This identifies which portion of the report they would like to print. The choices will be activated with a check box. This information is entered into the Morning reports located under the Reports pull down menu in Power*Log / Core or Curve.

Sections to include

- 🔽 Lithology Summary
- 🔽 Total Gas Summary
 - Chromatography Summary
- Include Cost (\$)

This portion of the window allows the user the ability to pick and choose which of the Well End reports they would like to include with the printed am report. They include Bit records Casing Formations and Surveys. All these records default to the depth interval from the previous morning report but can be modified by the user.

-

Set Depth Ranges						
Bits:	398.00	to	512.50			
Surveys:	398.00	to	512.50			
Casing:	398.00	to	512.50			
Formation:	398.00	to	512.50			
ОК			Cancel			

Depth Range.

This button activates the Set depth range window so the user can decide what ranges of well end report data to include with the AM report printing. The default is the depth from the previous Am report and the one you have selected to print.

Single File Activate this check box if you wish to print multiple report dates to a single file. Or conversely deactivate this check box if you want multiple files created.

The Select All button will highlight all the am report dates.

The Clear All button will deselect all the am report dates.

The Print to Word button will activate the printing process and create either single or multiple files. The documents created will be Document 1 Document 2 etc.

How to Print Morning Reports to Word Format.

1. Click on Print Report to Word, under the File menu selection, to activate the Print Reports to Word window.

The user can also **click** on the shortcut **button** located on the toolbar.

- 2. Click on the Morning Reports tab to activate that portion of the window.
- 3. **Choose** the **well** you wish to create a report for from the selection box if the default well is not the one you want to print.
- 4. Highlight the report dates you wish to print in the Dates field by clicking on them once. To select/highlight all of the reports, click on the Select All button. To deactivate all of the reports, click on the Clear All button.
- 5. Select the report options from the appropriate check boxes.
- 6. **Select** from the Single Report Options which data from the **well end reports** you would like to include in this printed AM report.
- 7. If you have selected some Well End report data to be included with the AM report printing and you would like to

change the default depths to search for a different interval of data then you would **Click** on the **Depth Range**... **button** to activate the window and change the depths accordingly.

			5,	
Set Depth F	Ranges			×
Bits:	398.00	to	512.50	
Surveys:	398.00	to	512.50	
Casing:	398.00	to	512.50	
Formation:	398.00	to	512.50	
ОК			Cancel	

- Click on the OK button to return to the main window.
- 9. Click on the Print to Word button to print the AM report to word format. This will activate your copy of MS Word application and you can view, customize and save these reports.

Print Setup

This command allows you to customize your printing options.

Click on Print Setup, under the File menu selection, to activate the Print Setup window shown below:

File Edit View Reports	Options
Connect Disconnect	
Access Registration	•
New Open Close	Ctrl+N Ctrl+O
Import / Export ASCII Export Backup	}
Print Log Print Morning Report Print Well End Report Print Reports to Word®	Ctrl+P
Print Setup	
Exit Survey Viewer	

- 1. If you wish to use a printer other than the default printer, then select an available printer from the drop down menu.
- 2. Define the Paper Orientation by selecting either the Portrait or Landscape radio button .
- 3. Select a Paper Size(generally Letter 8.5 x 11), and Source from the appropriate drop boxes.

4. To modify settings that are <u>specific</u> to the printer, **click** on the **<u>Properties...</u> button**.

Note: All reports are printed out in Portrait (Letter 8.5 x 11), however, logs may be printed in any format you wish.

5. If you are printing the log in <u>color</u>, then select **Diffusion** or **Error Diffusion**, under **Dithering**, via the **Graphics** tab from within the printer's **Properties** window. Conversely, if you are printing the log in <u>black & white</u>, then select **Coarse**, under **Dithering**, via the **Graphics** tab from within the printer's **Properties** window. Moreover, select **Print True Types as Graphics** via the **Fonts** tab from within the printer's **Properties** window, regardless of whether you are printing in black & white or color.

Exit

File		Closes current logs/wells, closes Power*Log / Curve / Core™, and returns to the Windows Desktop.
Connect Disconnect Access Registration	۰,	Click on Exit, under the File menu selection, to exit from Power*Log / Curve / Core™.
New Open Close	Ctrl+N Ctrl+O	Shortcut: Click on the shown below, at the far right of the Title Bar
Import / Export ASCII Export Backup	k	
Print Log Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Ctrl+P	
Exit Survey Viewer		

<u>Note</u>: You do not have to save any of your changes prior to exiting from **Power*Log / Curve / Core™**, because all changes to the log/well are automatically saved to the **Power*Geology** database.

Chapter Two – Edit Menu



Undo

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.

How to Undo:

1. Click on Undo, under the Edit menu selection, to undo the last Log action or the button on the toolbar.

N.B. This functionality does not undo anything that has been done in the data entry windows such as the Sample Description report etc.

Edit
Undo Move short Symbol
Redo Move short Symbol
Log
Well
Print Sections
Log Configuration
Track Configuration
Layer Configuration
Metafile Options
Delete Generic Groups
Generic Group Sorting
Core / Sample Header 🔹 🕨
Log Layer Annotations

Redo

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.

How to Redo:

2. Click on Redo, under the Edit menu selection, to redo the last Log action or

the button on the toolbar.

N.B. This functionality does not undo anything that has been done in the data entry windows such as the Sample Description report etc.

Log

Allows you to add, delete, and edit log information.

A log can be defined as a series of tracks and their layers that have been specifically configured to meet the needs of the individual user. **Power*Log / Core & Curve** provides the user with seventeen (17) preconfigured **SYSTEM Logs** ranging in size from 8.5" to 14" wide.

When a new log is first created, it has the same name as the **Well/Log Name** that you entered into the **Well/Log Name** field of the **New Log** window. This log name can be changed at a later date in the **Log** field within the **Log** window, as can the **Primary Well**, that is identified by the **UWI(Unique Well Identifier)** originally entered into the **New Well** window.

Start Date and Storage Unit values are also derived from the information you originally entered into the New Well window.

The Log Type is determined by the program in which the log was created: if the log was created with Power*Log or Power*Core, then the Log Type will be vertical (vert). Conversely, if the log was created with Power*Curve, then the Log Type will be horizontal (horz).

The **Remarks** portion of the **Log** window, shown below, allows you to comment about your log configuration and its various unique characteristics.

Edit		
Undo Move short Symbol		
Redo Move short Symbol		
Log		
Well	Log	X
Print Sections		
Log Configuration	Save Undo New Del First Prev ? Next Last Well Log Builder	
Track Configuration	Type: Start Date: Finish Date: Storage	Units:
Layer Configuration	Log ABC Horizontal horz 👻 Jun 13, 2008 Metric	•
Metafile Options	Primary Well ABC 0il 12:25:45-12 Remarks:	
Delete Generic Groups	Lithology Description Templates	~
Generic Group Sorting	Input	
Core / Sample Header 🔹 🕨	Output	2
Log Layer Annotations	L]9	1

How to Delete a Log

- 1. Click on Log, under the Edit menu selection, to activate the Log window.
- 2. Click on the button to activate the Log List window.
- 3. **Double click** on the log you wish to delete and its attributes will be displayed accordingly within the **Edit Log** window.
- 4. Click on the Del Delete button and a confirmation message will appear asking, "Would you like to delete the current record?"
- 5. Click on the <u>Yes</u> button to delete the log from the Log List and from the database.

<u>Note</u>: When you delete a log, you are not deleting the **Primary Well** or well data associated with that log. However, if you also wish to delete the **Primary Well** or well data associated with the log, see "**How to Delete a Well**" in the **Edit Well** section of the **User Manual**.

Field Restriction Table:

Log (ID) Type Start Date Finish Date Primary Well (UWI) Lithology Input	50 10 DATE FORMAT DATE FORMAT 20 20	Character Character Mandatory Optional Character Character	Mandatory Optional Mandatory Optional
Lithology Input	20	Character	Optional
Lithology Output Remarks	20 100	Character Character	Optional Optional

Well

Lets you edit existing wells, and delete a well. The majority of this information is usually filled in at the start of a well, but should be updated with new information at the completion of a well.

The information associated with each well is entered into the **Well** window, along with the well's **UWI** (**Unique Well Identifier**). Note that each well and the information that it contains must be associated with a **UWI** (**Unique Well Identifier**) in order to distinguish it from the other wells residing within the **Power*Log / Core & Curve** database. However, the only way in which a well's information can then be displayed is by associating it with a log and then having that log open.

1. Click on Well, under the Edit menu selection, to activate the Well window shown below:

	Well	
	Save Undo New Del First Prev ? Next Last Storage Units: Imperial Original Unit	s: Imperial
	API 35-139-23155 Surf. Location: 35-139-23155	
	Well Name Tutorial Well Btm. Location: 34-138-23155	
	Operator: ABC Oil & Gas Licensee: ABC Oil & Gas Permit # 32	23
	Drilling Contractor: Drill em Up Poot: Large Field: Barnet	
	County: Silverado Rig #: 27	
Indo Move short Symbol	Province/state: 1 Cound	llar 67
edo Move short Symbol	KB: 82 Casing Flat	
	Surface Coordinates	
og	Latitude 30.1612 N/S: 400 ft North of the South boundary	
/ell	Longitude 97.4433 E/W: 550 ft East of the West boundary	
rint Sections	Intermediate Casing Point Coordinates	
The Sectoris	Latitude 30.1615 N/S: 1345 ft North of the South boundary	
og Configuration	Longitude 974434 E/W: 520 ft East of the West boundary	
rack Configuration	Bottom hole Coordinates	
ayer Configuration	Latitude 30.1635 N/S: 9600 ft North of the South boundary	
ayer Configuration	Longitude 97.4437 E/W: 1027 ft East of the West boundary	
letafile Options	UTM Surface Coordinates	
	Northing: 3349894 Easting: 621161	
elete Generic Groups	Hole Direction: Horizontal T Faulted Deviated Hole ID: Ist of Many	
eneric Group Sorting	- Depths Date Time	Work Sched
ore / Sample Header 🔹 🕨	Drillers T.D. Drillers T.D. Drillers T.D. Drillers T.D. Loggers T.D. Loggers T.D. Spud: Aug 13, 2012 08:00	Curves
	(Tally) MD (Tally) TVD (Strap) MD (Strap) TVD MD TVD	Mud Types
og Layer Annotations	10500 7962.11 10498 7962.1 T.D.: Sep 12, 2012 09:40	
	KB to Ground Cut Fill Plugback Sidetrack Rig Release: Sep 17, 2012 08:00	Dir. Surveys
	17 2 8027 8035 Well Status: Potential Oil Well	Det. Lith.
		Abstract

Note: The well window has been filled in to give you an idea of how to complete the different fields.

- 2. Change or add to the different fields by typing in the fields. Certain fields have restrictions to what data they accept. If an error occurs while saving refer to the status bar for instructions.
- 3. Click on the **button or press ALT-S** and the well data that you have just entered will be saved to the database.

Note: The Well Name field should be highlighted after you have clicked on the button or press ALT-S, as an indication of a properly saved record. Some of the fields in the Edit Well window have character restrictions or mandatory requirements. Consequently, if any of these restrictions have been violated or if any requirements have not been met, the offending field will be highlighted and the problem will be displayed on the Status Bar, at the lower left hand corner of your screen. Remember to save your work again, after the problem has been rectified.

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

Det. Lith Button:

	Det. Lith.	
The	Det. Litti.	Detailed Lithology button allows you to add Detailed Lithology Groups to your well as well
as ge	et access to the	Detailed Lithology Scales. The Scales sometimes are entered wrong when initiating a log
and o	can cause a flo	ating point error in the program. The user can get access to the detailed lithology scales
witho	out opening the	log.

- 1. Click on Well, under Edit, to activate the Well window and it will default to the active well.
- 2. Click on the Well Name drop box to activate a list of well names and double click on the Well Name you wish to display within the Well window.
- 3. Click on the shown below:

Detailed Lithology Group	
Save Undo New Del First Prev ? Next Last	Scales
Group ID: DETLITH	

New

- 4. Click on the **button or press ALT-N** to prepare the window for the entry of a new record.
- 5. Then, type a Group ID name for your new Detailed Lithology Group into the Group ID field.
- 6. Click on the **Save** button or press ALT-S.
- 7. If the record has been successfully saved, **click** on the appropriate button, when prompted with the **Shortcut Options** system window.

Now that you have added a Detailed Lithology Group to the log, you must associate it with a layer. Associating an Existing Detailed Lithology Group with the Active Layer...

- 1. Make sure that the **Detailed Lithology** layer you wish to use is the active layer by selecting it from the **Layer Selection List**.
- 2. Select Layer Configuration, under the Edit menu selection, or click on the Layer Configuration button on the Toolbar to activate the Layer Configuration window.
- 3. Click on the available Detailed Lithology Groups in the database for that well.
- 4. **Double click** on the **Detailed Lithology Group** you wish to associate with the currently active layer and you will be returned to the **Layer Configuration** window.
- 5. Click on the **Save** button or press ALT-S to save the changes to the active layer and exit from the window.

Deleting a Detailed Lithology Group...

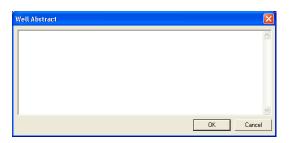
- 1. Click on Well, under the Edit menu selection, to activate the Edit Well window.
- 2. Click on the Det. Lith. button to activate the Detailed Lithology Group window.
- 3. Use the **Next** button to find the Detailed Lithology Group you wish to delete.
- 4. When the **Detailed Lithology Group** name is displayed in the window, **click** on the **Delete button** and you will be prompted with the following message, "*Would you like to delete the current record?*"
- 5. Click on the <u>Yes</u> button and the selected **Detailed Lithology Group** will be deleted accordingly.

Abstract Button

This button allows you to access the Well Abstract window, so that you may document an overview or maybe important facts regarding the well.

Adding Well Data to the Well Abstract window...

- 1. Click on Well, under the Edit menu selection, to open the Well window and it will default to the active well. This can also be found under the report menu selection.
- 2. Click on the Well Name drop box to activate the Well List window and then double click on the Well Name you wish to work on.
- 3. Click on the **Abstract** button within the Well window to activate the Well Abstract window.



- 4. Type in whatever information you feel is pertinent to the well you are currently working on and remember to keep your comments factual and concise.
- 5. When you are finished, **click** on the **UK button** within the **Well Abstract** window to return to the **Well** window.
- 6. Click on the **Save** button or press ALT-S within the Well window to save your work and then click on the appropriate button when prompted with the Shortcut Options system window.

<u>Note</u>: You may return to the **Well Abstract** window as many times as you wish in order to update your well information.

Curve Button

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 only two ways to change the Curve Attributes. One is through the Layer Configuration window and the other is Well Window and is located under the Edit pull down menu

How to Change the Digital Curve Attributes (Curve Units, Depth Units, Null Value and Remarks)

1. Click on the **Curves** button in the lower right corner of the Well of the window. This will activate Digital Curve window. The user can also right click on an active curve layer and select the Edit Curve selection.

Digital Curve	<u> </u>
Save Undo New Del First Prev ? Next Last	Scale
Name Drill Rate	
Units: min/m	
Depth Units: M	
Null Value: -1	
Remark:	

- 2. The Default Curve name will be the curve name first in the Alphabet. The user can **click** on the **button** to see a list of the curves associated with the primary well.
- 3. You can now rename, or type in, new units, change the null value, or add/change the remarks.
- 4. Click on the **Scale** button or press ALT-S. The user can also change the curve scales by clicking on the

button and editing the curve scales here.

How to Delete a Well

- 1. Click on the Edit menu selection and Click on Well to activate the Well window.
- 2. Click on the Well Name... button to activate the Well List window.

	a da Marra abaut Creabal		2 () () () () () () () () () (
	edo Move short Symbol	CLEAR BDY LK S 4-13-84-11 [100041308411W600]	Query
Lo	og	ABC COMPANY [H20] ABC Oil Anywhere 12-25 [ABC Oil 12-25]	Select
W	/ell	ABC 0il Anywhere 12-25 [ABC 0il 12-25-45-12] ACL LPINECK 2-5-31-28 [100020503128W/400]	Clear Field
Pr	rint Sections	Anybody Oil and Gas [100120204512W400] Anyone Enchant [100041001416W400]	Cancel
		Aramco Carbonate Template [Aramco] ASE051058LOG [ASE051058]	•
Lo	og Configuration	BG CANADA CARÌBOU 5-6-J 94-G-7 (2008006J094G0700)	_
Tr	rack Configuration	BG Canada Hz N Bubbles a-26-G [2004026G094G0800] bob [bob]	
La	ayer Configuration	Chattak 2B [Chattak 2B] CLEAR BDY LK S 4-13-84-11 [100041308411W600]	
		CLEAR Bdy Lks 11-12-84-11W6 [100111208411W600]	•
M	letafile Options	Clear BDYLKS 14-13-84-11 [100141308411W600] Clear Cecil 4-6-84-10 [100040608410W600]	
		CNRL Apple Core Template (CNLR) CNRL HZ HELMET a-A17-F/94-P-1 [202A017F094P0100]	
D	elete Generic Groups	CNRL HZ HELMET c-81-F-94-P-1 [200C081F094P0100] CNRL Stoughton 2Hz 3D13-13v5-C-24W2M Leg 2 [191052400808W201]	
G	eneric Group Sorting	Compton Connemra 3-11-16-27 [100031101627W400]	
		COMPTON WORSLEY 14-4-88-9 [100140408809W600] CONNAUGHT BARONS 03-23 [100032301223W400]	
	ore / Sample Header 🔹 🕨	Core Log [Core Log DS]	
	og Layer Annotations		

- 4. Click on the button and a confirmation message will appear asking, "Would you like to delete the current record?"
- 5. Click on the <u>Yes</u> button to delete the well from the **Well List** and from the database.

<u>Note</u>: When you delete a well, you are not deleting the log that the well is associated with. If you wish to delete the log, see "How to Delete a Log"

Optional Optional . Optional . Optional . Optional . Optional Optional

Optional

Optional Optional Mandatory Optional Optional Mandatory Optional Optional

Mandatory Optional Optional Optional Optional Optional Optional

Field Restriction Table:

Bottom Hole Latitude	60	Character
Bottom Hole Location	50	Character
Bottom Hole Longitude	60	Character
Bottom Hole EW	100	Character
Bottom Hole NS	100	Character
Intermediate Casing Latitude	60	Character
Intermediate Casing Longitude	60	Character
Intermediate Casing EW	100	Character
Intermediate Casing NS	100	Character
Casing Flange Elevation	5.5	Numeric
Country	50	Character
County	50	Character
Cut	5.5	Numeric
Driller's TD (Strap) MD	5.5	Numeric
Driller's TD (Strap) TVD	5.5	Numeric
Driller's TD (Tally) MD	5.5	Numeric
Driller's TD (Tally) TVD	5.5	Numeric
Drilling Contractor	50	Character
Field (Assigned Field)	50	Character
Fill	5.5	Numeric
Ground Elevation	5.5	Numeric
Hole Direction	12	Character
Hole ID	15	Character
KB Elevation	5.5	Numeric
KB to Ground	5.5	
		Numeric
Licensee	50	Character
Logger's TD MD	5.5	Numeric
Logger's TD TVD	5.5	Numeric
Operator	50	Character
Plugback Depth	5.5	Numeric
Province/State	50	Character
Reference Elevation	12	Character
Rig Release Date	DATE	
5	FORMAT_24:00	
Spud Date	DATE	
	FORMAT_24:00	
Storage Units	12	Character
Surface Location	50	Character
Surface EW	100	Character
Surface NS	100	Character
Surface Latitude	60	Character
Surface Longitude	60	Character
T.D. Date	DATE	
	FORMAT_24:00	
UTM East Coordinates	11.2	Numeric
UTM North Coordinates	11.2	Numeric
UWI	20	Character
Water Depth	5.5	Numeric
Water Depth Reference	4	Character
Well Abstract	40000	Character
Well Name	50	Character
	5.5	Numeric
SideTrack Depth		
Well Status	100	Character

Print Sections

The **Print Sections** window allows the **Power*Log / Core & Curve** user to preset the **Well Section** and **Today Section** print intervals within the **Print Log** window for a specific log/well. To activate the **Print Sections** window shown below, **click** on **Print Sections**, under the **Edit** menu selection.

Edit	
Undo Move short Symbol	Print Sections
Redo Move short Symbol	Save Undo New Del First Prev ? Next Last
Log	
Well	UWL/ API: 35-139-23155
Print Sections	Well Name: Tutorial Well
Log Configuration	└ Vertical Print Section
Track Configuration	Top Depth: 5990 Base Depth: 6140
Layer Configuration	
Metafile Options	Horizontal Print Section
	Top Depth: 6100 Base Depth: 10000
Delete Generic Groups	
Generic Group Sorting	Today Print Section
Core / Sample Header 🔹 🕨	Top Depth: 6050 Base Depth: 6140
Log Layer Annotations	
eogledy of Thin locations	

Vertical Print Section - Allows the user to enter the **Top Depth** and **Base Depth** values representing the specific print intervals for a given <u>vertical</u> log/well within **Power*Log/Core**, which will then be automatically displayed as values in the **Well Section** within the **Print Log** window. This also controls the thumb on the scroll bar. Pull the thumb over ¹/₂ way along and it will go to the top of the log. It is the same for the base.

<u>Note</u>: The **Top Depth** and **Base Depth** print interval values may represent an interval that is larger than the lithologic interval, due to the presence of **Annotations** above and below the actual lithologic section.

Horizontal Print Section - Allows the user to enter the **Top Depth** and **Base Depth** values representing the specific print intervals for a given <u>horizontal</u> log/well within **Power*Curve**, which will then be automatically displayed as values in the **Well Section** within the **Print Log** window. This also controls the thumb on the scroll bar. Pull the thumb over 1/2 way up and it will go to the top of the log. It is the same for the base.

Today Print Section - The values displayed in the Top Depth and Base Depth fields were originally entered as Today's Interval values within the Export Log/Well window and will also be automatically displayed as Today Section values within the Print Log window.

Log Configuration

Allows you to specify and customize Colors, Grids, Header lengths, and Axes within the striplog. A log consists of at least 1 track and may contain as many tracks as you wish. The log configuration window allows the user to configure the **Line** types, **Colors** (foreground and background), and **Header*** length by adjusting the necessary fields.

*The **Header** is used to identify the layers within each of the tracks, both on the screen and on hard copy presentations.





Edit	
Undo Move short Symbol	Log Configuration
Redo Move short Symbol	Save Undo New Del First Prev ? Next Last Width FG Color BG Color
Log	
Well	Name: Striplog
Print Sections	Current Track
Log Configuration	Grid & Log Definitions Grid Lines for Data-Axis and Depth-Axis Grid Lines for Data-Axis and Depth-Axis
Track Configuration	
Layer Configuration	Type: Linear Major: 50 Major Minor Increment
	Minor: 10 Style: Solid V Solid V Dot V
Metafile Options	Increment: 2 Width: 2 1 1
Delete Generic Groups	
Generic Group Sorting	Depth Increment Header Length Current Depth
Core / Sample Header	Scale: 10 🔽 1 🔽 Display Header 1.75 6066
Log Layer Annotations	

Editing the Active Log Configuration...

- 1. Open the log that you wish to edit.
- 2. Click on Log Configuration under the Edit menu selection, or use the Log Configuration button on the Toolbar to activate the Log Configuration window.

Note: You may also access the Log Configuration window by clicking on the	Log Config.	button within the Log
Configuration Builder window.		

3. Make any changes in the following manner:

<u>Grid Color</u> - Select the desired Grid Color from the FG (foreground) Color field drop box.

Background Color - Select the desired Background Color from the BG (background) Color field drop box. Grid Lines - Select the styles of your Majors, Minors, and Increments by selecting from the available styles in the drop boxes. Then, select the line width by entering a value in the Width fields.

<u>Depth Axis Spacings</u> - Select a Linear or Ruler style for the grid from the Type field drop box. Then, insert values into the Major, Minor, and Increment fields within the Depth Axis Spacings portion of the window.

Note: Select values that best fit the log screen and hard copy scales.

Log Scales	Major	Minor	Increment
5" (Imperial)	50	10	2
1:240 (Metric)	10	5	1
Core Log Scales	Major	Minor	Increment
1:120 or less	4	1	0.4 (For Grid Patterns displayed in 1/5ths)
1:120 or less	4	1	0.5 (For Grid Patterns displayed in 1/4trs)

<u>Note</u>: Implementing one of the **Core Log Scale** settings described above is <u>only</u> applicable to the printout of a **Core Log**. Once you have finished printing out your **Core Log**, you <u>must</u> change the **Depth Axis Spacing** values back to the default **Log Scale** of **1:240** and its associated settings.

<u>Header Length</u> - Type the length of the header (in inches) into the **Header Length** field. Make sure that the header is long enough to fully display the titles of each track and the layers within each track.

- 4. After completing the changes, **click** on the **<u>Save</u> button or press ALT-S.**
- 5. Press **Exit** from the window that pops up to tell you your record was saved successfully and the changes will be displayed on the active log.

Field Restriction Table:

Mandatory Optional Optional Optional

Depth Axis Type	15	Character	Optional
Depth Axis Major	5.5	Numeric	Optional
Depth Axis Minor	5.5	Numeric	Optional
Depth Axis Increment	5.5	Numeric	Optional
Major Style	5	Character	Optional
Major Width	1.2	Numeric	Optional
Minor Style	5	Character	Optional
Minor Width	1.2	Numeric	Optional
Increment Style	5	Character	Optional
Increment Width	1.2	Numeric	Optional
Log Scale	5.0	Numeric	Optional
Log Depth Increment	5.5	Numeric	Optional
Header Length	3.2	Numeric	Optional
Current Depth	5.2	Numeric	Optional

Track Configuration

This is the only window that allows you to offset tracks* and add information to individual track headers. This window will also allow the user to turn off the outside border of any Track.

A track is a portion of the log that contains one or more layers of information. The track configuration window can be used to edit the name of the track, the track header, and the track's depth offset in relation to the rest of the tracks within the log. The user must keep in mind that <u>any</u> track can be offset with respect to its actual depth. A positive integer will increase the depth of the track, while a negative integer will decrease the depth of the track. To be able to work within or on a track, the track must be **ACTIVE**: highlighted with a <u>green</u> border. The Track configuration will also allow the user to turn off or on the track borders between tracks.

*Track Offsetting is <u>only</u> available to those users possessing the Correlational Module.

Shortcut:

This is the Track Configuration window:

Undo Move short Symbol Redo Move short Symbol	Track Configuration	X
Log Well Print Sections	Save Undo New Def First Prev ? Next Last Name: Lithology Description Sequence: 14 Width: 2.72	
Log Configuration Track Configuration Layer Configuration	Foreground Color: Background Color: Depth Offset: Current Layer Lithology Text Remarks:	
Metafile Options Delete Generic Groups Generic Group Sorting	Heading: Lithology Description ABC 0il Anywhere 12-2	
Core / Sample Header	12-23-45-12 W4M	

Editing the Active Track Configuration...

- 1. Click on the desired track to make it active: highlighted with a green border.
- 2. Click on Track Configuration, under the Edit menu selection, or click on the Track Configuration button on the Toolbar to activate the Track Configuration window shown above.

<u>Note</u>: You may also access the **Track Configuration** window by clicking on the **Track Config. button** within the **Log Configuration Builder** window, once you have highlighted the track you wish to edit.

Adding a Track Header

3. Type the desired **Header** information into the **Heading** fields within the window.

Offsetting or Depth Shifting a Track: (Correlation Module only)

4. Type the offset figure into the **Depth Offset** field within the window.

Note that a positive integer will <u>increase</u> the depth of the track (move it down), while a negative integer will <u>decrease</u> the depth of the track (move it up).

Changing Track Borders for the main log

5. The user can turn off and on the borders between tracks on any log. The Track border is turned on when the check box 🔽 is activated or selected and is turned off when the check box is deactivated or unselected .

Changing Track Borders for the track header

6. The user can turn off and on the borders between tracks on any log. The Header border is turned on when the check box *I* is activated or selected and is turned off when the check box is deactivated or unselected *I*.

Note: To turn off the border between two tracks the left or bottom selection of one track and the right or top selection from the adjacent track must be deactivated or unchecked.

Save	l
<u>o</u> ave	L

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

30

5.0

3.2

5.2

30

30

100

button to exit the window and view your changes.

Field Restriction Table:

Name	
Sequence	
Width	
Depth Offset	
Current Layer	
Remarks	
Heading (1, 2, & 3)	
-	

Character Mandatory Numeric Optional Numeric Optional Numeric Optional Character Optional Character Optional Character Optional

Layer Configuration

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 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 Change Energy / Sea Level 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 Fills

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** Generic Symbol **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 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 Surveys Tests **Trace Fossils**

Shortcut:

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

Edit	Active Layer Configuration [Drill Rate]	
Undo Move short Symbol Redo Move short Symbol	Layer - Display Settings Curve Definitions Layer So Save Undo	cales Data Group IDs Formation and Age Display Dip Meter Definitions
Log Well Print Sections Log Configuration Track Configuration Layer Configuration Metafile Options Delete Generic Groups Generic Group Sorting Core / Sample Header Log Layer Annotations	Name: Drill Rate	Image: Second Color: black Pepth Offset: Image: Second Color: Display Scale Placements Image: Second Color: Every 50 Start at:
		OK Cancel Help

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 Laver Selection List located on the Selection Bar (top left corner) and select the desired laver 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 Laver 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	o 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:

ctive Layer Configuration [Drill Rate]	
Layer - Display Settings Curve Definitions Layer Sc	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Drill Rate ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) □ Display Backup scales ✓ Display Scale Change Line Indicator ✓ Display scales on non-active layers □ Display Full Logarithmic Scale	Data Type: Curve UWI Image: Curve Foreground Color: black Depth Offset: Image: Curve Display Scale Placements Image: Curve Every 50 Start at:
 Display Depth-Axis Grid Display Data-Axis Grid 	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 Scale Change Line Indicator If this box is checked (default), any time the user changes scale a line will run across the layer (color and size to be found in the right click curve menu only) indicating a scale change.

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 UWI... 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.

<u>Note</u>: A <u>positive</u> (+) number will move the layer **DOWN** the striplog, while a <u>negative</u> (-) 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:

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: Solid
Color: gray
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 **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.

The Edit Curve Attributes 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 **<u>Curve</u>** Field between the Curve and Curves Button shows the curve that is being displayed on that particular curve layer.

The <u>Width</u> 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 <u>Pattern</u> 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 <u>Style</u> 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 **<u>Color</u>** 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 <u>Point Indicator</u> 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 **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.
- 7. Click on the Save button or press ALT-S, when you are finished.
- 8. A system message will appear telling the user "Record saved successfully. Do you wish to Exit?" Click on 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.

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

Digital Curve	×
Save Undo New Del First Prev ? Next Last Sca	ale
Name Drill Rate Units: min//tt Depth Units: ft 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 **Name**... **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 Age Display Dip Meter Definitions 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 Style: Full Verbal Settings to Very Fine Silt Data-Axis Grid Carbonte Texture Scales to Very Fine Silt Units: Dip Meter Quality Scale Innear Cycles Major Minor Increment Left: Right: Log. Cycles: 8
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. Porosity Grade Scale Percent Layer Scale Dip Meter Scale Grain Size Scale Carbonate Texture Scale Carbonate Texture Scale Right: 0.00782 Grain Size Wo fields are used to define the scales for the scales for the scales for the scales for the scale scale Scale Scale Carbonate Texture Scale Right: 0.00782
layers defined above. Any other scales are handled by the digital curve attributes and scales The Grain size and Carbonate Texture scales can also be defined from the verbal setting selector. On the horizontal log the left scale is the bottom and the right scale is the top.
Grain Size Scales Very Coarse Sand v to Very Fine Silt This is an easy way to set your grain size scale for either the Grains Size or Grain size matrix layers. When this verbal selector is utilized it will automatically set up the natural log cycles for you.
Carbonte Texture Scales Boundstone 💽 to Clay
easy way to set your Carbonate texture scale for either the Carbonate Texture or Carbonate Texture matrix layers. When this verbal selector is utilized it will automatically set up the linear cycles for you. 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: Style - Select from <i>Full</i> or <i>Ruler</i> 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 Linear In Logarithmic Linear Logarithmic Linear Linear Logarithmic Linear L

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: 🕺

Units: 1/*	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 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 [Lithold	ogy Description]	
Layer - Display Settings Curve Definitions	Layer Scales Data Group IDs Formation	on and Age Display Dip Meter Definitions
Save Undo		
Annotation Group	Directional Survey	Detailed Lithology Group
lithtext		
Generic Category	Graphics	Dip Meter Group
MDT Run No	Visual Range (Energy)	Generic Symbols
		OK Cancel Help

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

Generic Category... You can use the 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

MDT Run No. ... MDT Run Number button only when the Data Type field You can use the 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 on

OK. the button.

Directional Survey Button

Directional Survey... Directional Survey button only when the Data Type field You can use the 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 1and its associated points.

Graphics Button

Graphics... Graphics Groups button is used, when a Graphics layer is the 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

OK. from the List. Then click on the button.

Detailed Lithology Group Button

Detailed Lithology Group... The 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 D	ip Meter layer is the currently
active	e layer within the Layer Configura	tion window. The Dip Meter Group button a	llows you to associate an existing
Dip N	leter Group to the currently active	e layer. Dip Meter Groups are listed by their G	Froup Name and can be selected

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

Visual Range Button

The Visual Range (Energy) Visual Range Group button is used, when a Visual Range layer is the currently active layer within the Layer Configuration window. The Visual range Group button allows you to associate an existing Visual range Group to the currently active layer. Dip Visual range are listed by their Group Name and can be selected by utilizing the drop box and selecting the according name from the List. Then click on the OK

button.

Generic Symbols Button

The Generic Symbols Generic Symbols Group button is used, when a Generic Symbol layer is the currently active layer within the Layer Configuration window. The Generic Symbols Group button allows you to associate an existing Generic Symbols Group to the currently active layer. The Generic Symbols Group are listed by their Group Name and can be selected by utilizing the drop box and selecting the according name from the List.

Then **click** on the OK 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.
- 5. 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 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	ations Expan	ded]			
Layer - Display Settings Curve Definitions	Layer Scales	Data Group IDs	Formation and Age Displa) Dip Meter De	finitions
Save Undo					
Formation Display Age Display ↓ Group ↓ Formation ↓ Member ↓ Display at top ↓ Display at top	-	Name Display on Name Display on			
			OK	Cancel	Help

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



<u>Group</u> – 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 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.

<u>Display at top</u> – 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

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.

Display at top – 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:

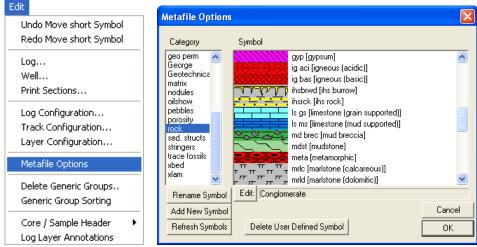
	Active Layer Configuration [B	edding Dips]		×	
	Layer - Display Settings Curve Definiti	ons Layer Scales Data Group ID	Formation and Age Display Dip	Meter Definitions	
	Save Undo				
	Set Color for Dips Azimuth				
	0* - 180*: Main 180* - 360*	color			
	Dip LineColor: brown	•			
	C Quality by Si	ze			
			OK Canc	l Help	
Set Color for Dips Azimuth Set Co	lor for Ding Azim	uth coloction all			l lar differential between dine
	-180°and dip azim			make a col	lor differential between dips
180* - 360*					
To cha	ange a color Click o	on the 🛄 but	on and this will	activate th	e Color Picker. Click on a
eeler or Lloo quotom dofinor	hadar pickar and th	on aliak on the	ОК		
color or Use custom defined				outton.	
Dip LineColor: brown	Dip Line	e Color selector	allows the user	to define th	ne line and circle color of the
dip data so that you can utili	ze multiple groups	on a single track	and you can dif	ferentiate l	between them.
3D Look 3D Look check	hox when activated	l will aive the do	or indicator a 3	Dimensio	nal look rather than a flat
look.				Dimension	
🗖 Qualitu bu Size o 🔐 u	.				
by size rather than a color fil	Size check box wi	hen activated wil	l allow the user	to identify t	the quality of the dip reading
	-	Dotti ale shown			
	ovality	•	ററ്	vality	۵
0%	25% 50% 75%	100%	0% 25%	50% 75%	100%
Quality	by Size checked	Qu	ality by Size no	t checked	
,	-,				
Once a field in this Layer Co	nfiguration Tab dia	loque window ha	is been change	d the user i	must then click on the Save
button or press ALT-S.		- 9			
Field Restriction Table:					
Name					
		30	Character	Mandatory	
		30 5.0	Character Numeric	Mandatory Optional	
Sequence Remarks		5.0 100	Numeric Character	Optional Optional	
Sequence Remarks UWI	_	5.0 100 20	Numeric Character Character	Optional Optional Optional	
Sequence Remarks UWI Annotation Grou		5.0 100 20 30	Numeric Character Character Character	Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve	ey	5.0 100 20 30 30	Numeric Character Character Character Character	Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style	ey	5.0 100 20 30 30 5	Numeric Character Character Character Character Character	Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve	ey	5.0 100 20 30 30	Numeric Character Character Character Character	Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style Data Axis Type Data Axis Style Log Cycles	ey	5.0 100 20 30 30 5 15 5 5 5.0	Numeric Character Character Character Character Character Character	Optional Optional Optional Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc	cles	5.0 100 20 30 30 5 15 5 5 5.0 5.0	Numeric Character Character Character Character Character Character Numeric Numeric	Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc Minor Linear Cyc	cles	5.0 100 20 30 5 15 5 5.0 5.0 5.0 5.0	Numeric Character Character Character Character Character Character Character Numeric Numeric Numeric	Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc Minor Linear Cycle	cles	5.0 100 20 30 5 15 5 5.0 5.0 5.0 5.0 5.0	Numeric Character Character Character Character Character Character Character Numeric Numeric Numeric Numeric	Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Survy Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc Minor Linear Cycle Scale Left	cles	5.0 100 20 30 5 15 5 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Numeric Character Character Character Character Character Character Character Numeric Numeric Numeric Numeric Numeric Numeric	Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc Minor Linear Cycle Scale Left Scale Right	cles	5.0 100 20 30 5 15 5 5.0	Numeric Character Character Character Character Character Character Character Numeric Numeric Numeric Numeric Numeric Numeric Numeric Numeric	Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc Minor Linear Cyc Increment Cycle Scale Left Scale Right Scale Units	cles	5.0 100 20 30 5 15 5 5.0	Numeric Character Character Character Character Character Character Numeric Numeric Numeric Numeric Numeric Numeric Numeric Numeric Numeric Numeric Numeric Numeric	Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc Minor Linear Cycle Scale Left Scale Right	ey cles cles s	5.0 100 20 30 5 15 5 5.0	Numeric Character Character Character Character Character Character Character Numeric Numeric Numeric Numeric Numeric Numeric Numeric Numeric	Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Surve Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc Minor Linear Cyc Increment Cycle Scale Left Scale Right Scale Units Curve ID	ey cles cles s	5.0 100 20 30 5 15 5 5.0	Numeric Character Character Character Character Character Character Character Numeric Numeric Numeric Numeric Numeric Numeric Numeric Character	Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional Optional	
Sequence Remarks UWI Annotation Grou Directional Survy Depth Grid Style Data Axis Type Data Axis Style Log Cycles Major Linear Cyc Minor Linear Cyc Increment Cycle Scale Left Scale Right Scale Units Curve ID Curve Line Widt	ey cles cles s	5.0 100 20 30 5 15 5 5.0 10.5 10.5 30 1.25 30	Numeric Character Character Character Character Character Character Character Numeric Numeric Numeric Numeric Numeric Numeric Numeric Character Numeric	Optional Optional	

Metafile Options

This option allows the users to edit any existing metafiles or symbols within the PowerSuite applications (i.e. rock types, accessories, structures etc.) or add new Metafiles or symbols to our lists for the more sophisticated users.

How to Edit an Existing Metafile

1. Click on the Metafile Options selection located under the Edit pull down menu. This will activate the Metafile Options window.



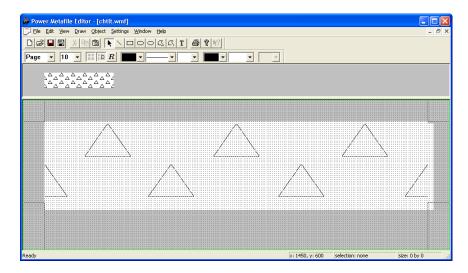
- 2. Click on the category of the symbol you wish to modify or edit. This will activate a list of existing symbols shown on the right hand side of the window.
- 3. Click on the Symbol you wish to edit. It will become highlighted and fill in the edit field.
- 4. Click on the button. This will activate a System Message window shown below.

System	Message 🛛 🔀
?	Press [Yes] to create a 2-pane window. Press [No] to create a single pane window.
	Yes No

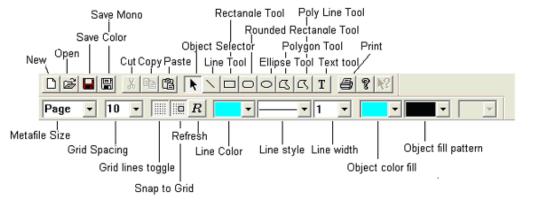
Note: A (two) **2- pane window** shows the metafile in regular and expanded views. A **single pane** window shows the metafile in an expanded view only.

5. Click on either the Yes or button and the Power Metafile Editor will open with the selected symbol in the window that you had selected.

Note: The Rock Type window shown below is a two pane window and is different from any other Metafile window. The upper pane shows the actual screen or print size. The difference with the rock type window is that the upper pane shows the metafiles repeatability. The upper pane is placing the same metafile staked on top of each other and left to right attempting to show the user the metafiles repeatability. This is essential when creating or editing rock types because they should be repeatable so when printed they will appear seamless when drawn on the screen or printouts when the region is larger than the metafile.



The toolbar functionality's are defined in the illustration shown below.



Note: Lines on sedimentary structures / trace fossils will change color if line width is 1.

- 6. The lower or expanded portion of the window is the editable portion. With the mouse you can select a line, rectangle, polyline or other shape tool and draw in this window. You can move the lines or shapes by dragging the shapes, copy or delete by using the toolbar or keyboard keys or buttons. Use the drop down menus or the toolbars to select the different options the user can utilize.
- 7. Once the metafile has been modified to your specifications the user must **click** on the **Save button** on the toolbar or **click** on the **File** pull down menu and select **Save**.

Note: There are two save choices. The Save Mono is done automatically for you when you save the metafile. In other words the color metafiles are converted to black and white metafiles and saved to the Powersuite/symbolm folder. These mono metafiles come in useful when printing to a black and white printer. The color symbols are saved to Powersuite/symbol folder.

- Exit the Power Metafile Editor by clicking on the X in the upper right hand corner of the window or click on the Exit selection located under the File pull down menu. This will put the user back into the PowerSuite Application Metafile options window.
- 9. Repeat steps 2-8 to edit more existing metafiles.
- 10. **Click** on the **button** in the Metafile Options window to exit this window. All the changes will be reflected in the Choice lists, printed legends and on the screen and printed metafiles.

How to Add a New Metafile

Edit	Metafile Options	
Undo Move short Symbol Redo Move short Symbol	Category Symbol geo perm 🔿	~
Log Well Print Sections Log Configuration Track Configuration Layer Configuration Metafile Options	George Geotechnica matrix nodules oishow pebbles porosity track stringers trace fossis xbed xlam within track trace fossis trace	
Delete Generic Groups Generic Group Sorting	Rename Symbol Edit: Conglomerate	Cancel
Core / Sample Header Log Layer Annotations	Refresh Symbols Delete User Defined Symbol	OK

- 1. Click on the Metafile Options selection located under the Edit pull down menu. This will activate the Metafile Options window shown below.
- 2. Click on the category of the symbol you wish to add a new symbol to. This will activate a list of existing symbols shown on the right hand side of the window.
- 3. Click on the Add New Symbol button. This will activate the Metafile Options (Add Metafile) window.

Metafile Options		
Add Metafile		
Category:	rock	
Sub Category:	T	
Short Name:	ls grisup pkest	
Long Name:	limestone grain supported [Packstone]	
	Add	
ОК	Cancel Apply	Help

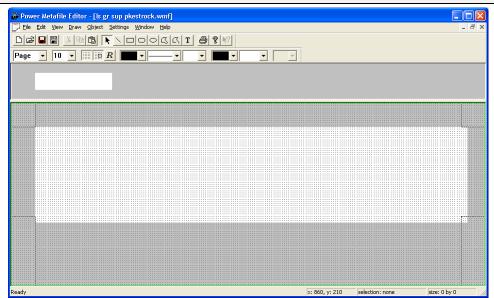
- 4. If you have selected the **components category** the user must **select** the appropriate accessory, fossil, grain or texture **Sub Category** drop box.
- 5. Type in a **short name** and a **long name** into their respective fields for your new metafile. These will appear in the choice lists and will be exported in the ASCII Lithology export file.
- 6. **Click** on the **Add button**. This will activate a System Message window if you have selected any other category other than rock.

Note: A (two) **2-pane window** shows the metafile in regular and expanded views. A **single pane** window shows the metafile in an expanded view only.

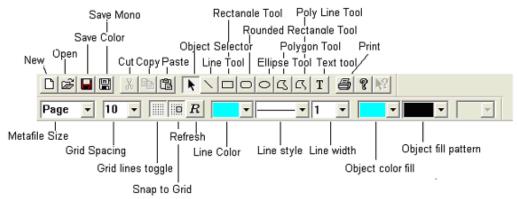


Note: The Rock Type window shown below is different to any other Metafile window. The upper pane shows the actual screen or print size The difference with the rock type window is that the upper pane shows the metafiles repeatability. The upper pane is placing the same metafile staked on top of each other and left to right attempting to show the user the metafiles repeatability. This is essential when creating or editing rock types because they should be

repeatable so when printed they will appear seamless when drawn on the screen or printouts when the region is larger than the metafile.

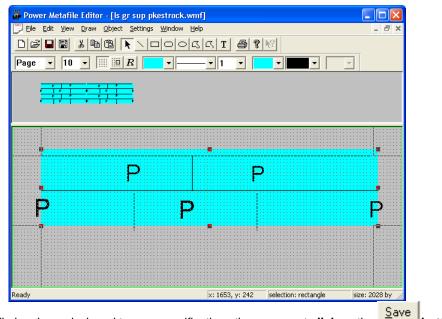


The toolbar functionality's are defined in the illustration shown below.



8. The lower or expanded portion of the window is the editable portion. With the mouse you can select a line, rectangle, polyline or other shape tool and draw in this window. You can move the lines or shapes by dragging the shapes, copy or delete by using the toolbar or keyboard keys or buttons. Use the drop down menus or the toolbars to select the different options the user can utilize.

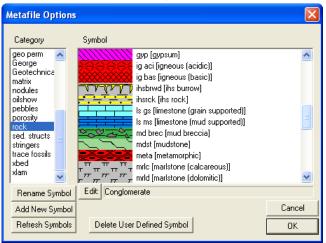
Note: The Polyline and Polygon drawing tools require a double **click** to finish the action. The text tool font size is determined by the height of the field. Once an action is performed the default reaction is to place the emphasis back on the select tool.



Once the metafile has been designed to your specifications the user must click on the button on the toolbar or click on the file pull down menu and select Save.

Note: There are two save choices. The Save Mono is done automatically for you when you save the metafile. In other words the color metafiles are converted to black and white metafiles and saved to the Powersuite/symbolm folder. These mono metafiles come in useful when printing to a black and white printer. The color symbols are saved to Powersuite/symbol folder.

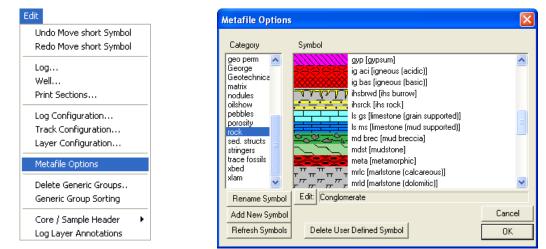
10. Exit the Power Metafile Editor by clicking on the X in the upper right hand corner of the window or click on the Exit selection located under the File pull down menu. This will put the user back into the PowerSuite Application Metafile options window. You will now view you new creation in the appropriate list.



- 11. Repeat steps 2-10 to add more metafiles.
- 12. Click on the button in the Metafile Options window to exit this window. All the changes will be reflected in the Choice lists, printed dynamic legends and will be available to draw with on your existing, new or old logs.

How to Delete an Added or User defined Metafile

We will not allow the user to delete a system metafile. You are able to modify or edit a system metafile but the deletions of these symbols are not allowed.



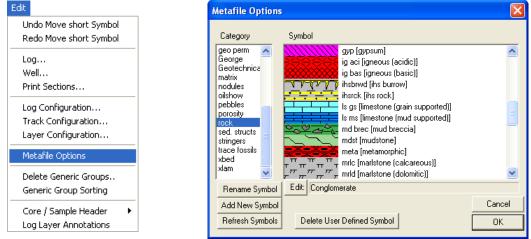
- 1. Click on the Metafile Options selection located under the Edit pull down menu. This will activate the Metafile Options window shown below.
- 2. Click on the category of the symbol you wish to delete. This will activate a list of existing symbols shown on the right hand side of the window.
- 3. Click on the user defined Symbol you wish to delete and it will become highlighted and fill in the edit field.
- 4. Click on the Delete User Defined Symbol button. This will activate a System Message window.

System Message			×			
Are you sure you want to delete this user defined symbol?						
Ves	No	Cancel				
<u>Foo</u>	<u> </u>					

- 5. Click on either the ^{Yes} button and the Metafile will be deleted.
- 6. **Repeat steps 2-5** to delete more users defined existing metafiles.
- 7. **Click** on the **button** in the Metafile Options window to exit this window. All the changes will be reflected in the Choice lists, printed legends and on the screen and printed metafiles.

How to Edit an Existing Name for a User defined Metafile

We will not allow the user to rename a system metafile. You are able to modify or edit a system metafile but the renaming or deletions of these symbols are not allowed.



- 8. Click on the Metafile Options selection located under the Edit pull down menu. This will activate the Metafile Options window shown below.
- 9. **Click** on the **category** of the symbol you wish to rename. This will activate a list of existing symbols shown on the right hand side of the window.

- 10. Click on the user defined Symbol you wish to rename and it will become highlighted and fill in the edit field.
- 11. **Click** on the **Rename Symbol button**. This will activate the Rename Symbol window.

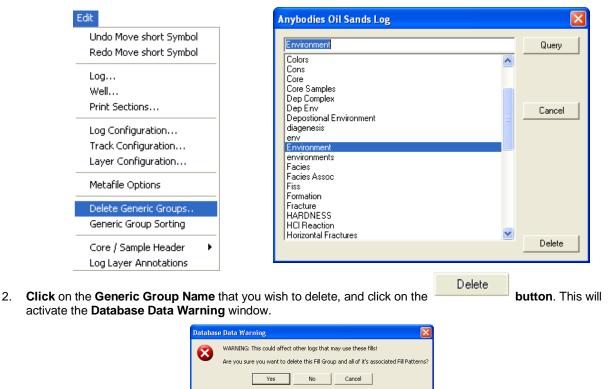
	Rename Symbols		
	Category Geotechnical Flags Long Name Hard Zone Short Name Hd Zn	OK Cancel	
12. Click on either the OK button	and the Metafile ren	ame confirm	ation window will appear
	aming Symbols		
Org	g. Category 'Geotechnical Flags' change g Long Name 'Hard Zone' change to 'Har g Short Name 'HZ' change to 'Hd Zn'		5
Pro	Yes No	Cancel	
13 Click on the Yes button to r	ename the symbol. T	his action w	

13. Click on the **button** to rename the symbol. This action will put you back into the Metafile Options window.

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.



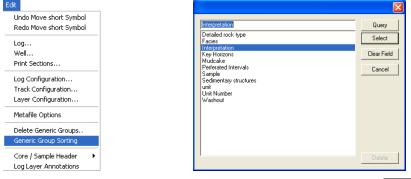
3. Click on the <u>Yes</u> button, and the Generic Group will be deleted.

Generic Group Sorting

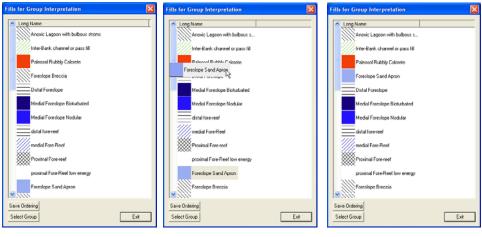
The **Generic Group Sorting** allows the user to view all the generic groups and order the group list into a format that is sensible to the user rather than our default that would be alphabetically.

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.



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





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**.

Core / Sample Header

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

	Core Log		.Vie.
Well Name: Anybody Oil Sands	Location: Athabaska	Ground / Collar: 321.05 (ft)	AL COL
UWI: Anybody Oil Sands	KB: 328.45 (ft)	UTM East: 213.45	
Hole ID: Hole Number 45	Core Quality: Good	UTM North: 123.12	
Cored Interval: 34 (ft) to 120.45 (ft)	Logged by: R.W. (Bob) Sephton P.Geol.	Slabbed: Yes	STATEMS ST
	Date: Feb 1, 2008		
Depth Correction: Good			
Remark: No problems or concerns. This is the remarks portion of the Core L It can have as many line of data as you o Your imagination is the limation to these Core Log Scale 1:96	can concieve.		

Core Log Header

	Core Log		.Vie.
Well Name: Anybody Oil Sands	Location: Athabaska	Ground / Collar: 321.05 (ft)	4
UWI: Anybody Oil Sands	KB: 328.45 (ft)	UTM East: 213.45	
Hole ID: Hole Number 45	Core Quality: Good	UTM North: 123.12	
Csg Depth (MD): 122.45 (ft)	Logged by: R.W. (Bob) Sephton P.Geol.	Slabbed: Yes	STATEMS V
Core Point (MD): 34 (ft)	Date: Feb 1, 2008	Lab.: Agat Labs	
Total Depth (MD): 120.45 (ft)	Lic.#: NA	% Calc. Recovery: 89	
Rig#: Encore	Lease#: 23145	% Total Recovery: 96	
Depth Correction: Good			
Remark: No problems or concerns. This is the remarks portion of the Core I It can have as many line of data as you Your imagination is the limation to these Core Log Scale 1:96	can concieve.		

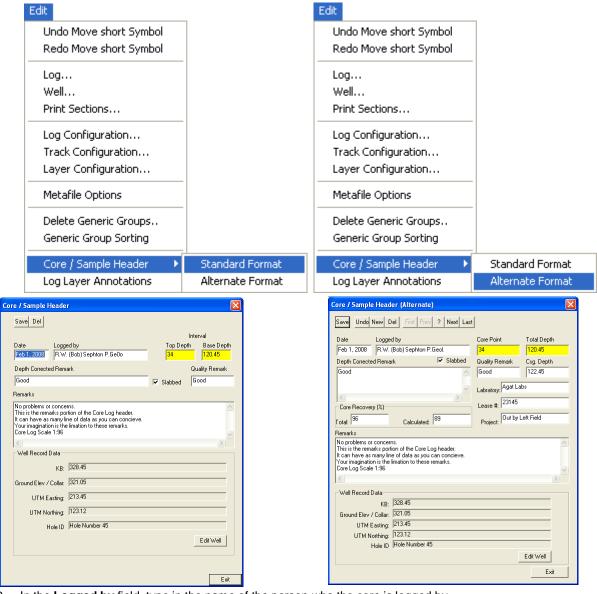
Alternate Core Log Header

	Bore Hole Log		.Vie.
Well Name: Anybody Oil Sands	Location: Athabaska	Ground / Collar: 321.05 (ft)	4
UWI: Anybody Oil Sands	KB: 328.45 (ft)	UTM East: 213.45	
Hole ID: Hole Number 45	Sample Quality: Good	UTM North: 123.12	
Logged Interval: 34 (ft) to 120.45 (ft)	Logged by: R.W. (Bob) Sephton P.Geo	l.	STEMS .
	Date: Feb 1, 2008		
Depth Correction: Good			
Remark: No problems or concerns. This is the remarks portion of the Core L It can have as many line of data as you Your imagination is the limation to these Core Log Scale 1:96	can concieve.		

Sample / Borehole Log header

How to Edit a Core / Sample Header

1. Click on the Core / Sample Header selection located under the Edit pull down menu and then either Select Standard Format or Alternate Format.



- 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 \checkmark , 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

Well							
Save Undo	New Del	First Prev ? N	lext Last S	torage Units: Impe	rial 💌 Ori	iginal Unil	s: Imperial
API	35-139-23155		Surf. Locatio	n: 35-139-23155			
Well Name	Tutorial Well		Btm. Locatio	n: 34-138-23155			
Operator:	ABC Oil & Gas			e: ABC Oil & Gas	Pe	rmit # 32	423
brinning bornadotor.	Drill em Up		Poo	Large	Fiel	d: Barnet	t
	Silverado		Rig # Elevation	27			
Province/State:			- Elevation	nse: Ground	6	ound / Co	-II 67
Country:	USA		Helele	KB: 82		asing Fla	
Surface Coordinate	s					- ing i la	
Latitude 30.1612	2		N/S: 40	0 ft North of the Sou	th boundary		
Longitude 97.4433	}		E/W: 55	D ft East of the Wes	t boundary		
- Intermediate Casing	Point Coordinate	\$					
Latitude 30.1615	;		N/S: 13	45 ft North of the So	uth boundary		
Longitude 97443	4		E/W: 52	D ft East of the Wes	t boundary		
Bottom hole Coordi	nates						
Latitude 30.1635	0705551		N/S: 96	00 ft North of the S	outh boundary		
Longitude 97.4437	,		E/W: 10	127 ft East of the We	est boundary		
UTM Surface Coor	linates		1				
Northing: 334989	4		Easting: 62	1161			
					- Markey		\leq
Hole Direction: Ho	rizontal 🗾	Faulted	🔽 Deviate	d Hele ID	st of Many		
Depths					Date Tin	ne	Work Schedule
Drillers T.D. Driller:	s T.D. Drillers T.D.	Drillers T.D. Loggers T		Spud:	Aug 13, 2012 08	3:00	Curves
	TVD (Strap) MD				Sep 12, 2012 09		Mud Types
10500 7962.	in a second of a	7962.1					Dir. Surveys
KB to Ground Cut	Fill	Plugback	Sidetrack	Rig Release:	Sep 17, 2012 08	5.00	
117 2		8027	8035	Well Status:	Potential Oil We	~	Det. Lith.
Water Depth	D (Water Depl	h.			~	Abstract

- 2. In the KB field, enter the KB. In the Ground / Collar, enter the ground elevation as well as the UTM coordinates and the Hole ID if you have them.
 - Save
- button or press ALT-S. This will activate the Core Header window showing the KB and Click on the 3. Ground Elevation that you have just entered.
- Exit button. If the record has been successfully saved, click on the appropriate button when 4. Click on the prompted with the Shortcut Options system window.

How to Delete a Core / Sample Header

Click on the Core / Sample Header selection located under the Edit pull down menu. This will activate the 1. Core / Sample Header and select the Alternate or standard selections window.

Del 2. Click on the button, and the Confirmation window will be shown.

Yes Click on the button, and the Core Header will be deleted. 3.

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

Log Layer Annotations

The Log Layer Annotation builder window allows you to add, edit, resize and move an annotation anywhere within the log.

Adding Annotations

1. Click on Log Layer under the Edit menu selection to activate the Annotation Builder window.

Edit		
Undo Move short Symbol		
Redo Move short Symbol		
Log		
Well		
Print Sections	Annotation Builder [LOG] (TEXT Mode)	
Log Configuration Track Configuration	Save New Del List Text V Line Box Align: Font Size: 10	•
Layer Configuration	Heading: Eblack 🔽 🕞 🛛 i 🗖 u Lithology: ho data	^
Metafile Options	Text: black 💌 🗆 b 🔽 i 🗖 u	
Delete Generic Groups	Display Scale: 0 🔽 🗖 Show Select Box	\checkmark
Generic Group Sorting		
Core / Sample Header 🔹 🕨	Line Thickness:	
Log Layer Annotations		

- 2. Click on the button or press ALT-N to enter a new Annotation.
 - If you wish to select a Font Size that is different from the default Font Size (set in the System Options window. under Options), then select a new Font Size from the Font Size drop box field.
 - If you wish to modify the Annotation further, you can use the Heading, Color, Bold, Italicize, and Underline fields to modify the appearance of the Annotation header and/or text. For example, The Bold b check

box can be activated to bold the Annotation header and/or text, the *Italic* i check box can be used to

italicize the Annotation header and/or text, and the Underline u check box 🗹 can be used to underline the Annotation header and/or text. Moreover, the Annotation header and/or text may also be assigned different colors selected from the Color drop box fields.

- Decide how Power*Log / Core & Curve will distinguish what portion of the Annotation is the header and what portion is the text by inserting a character, most often a colon":", in the Heading: field to indicate the separation of the header from the Annotation text. This is applicable to every line in the Annotation and you can have numerous headers as a result.
- For example: If you used the colon (:) displayed in the Heading: field by default, as your header and then typed "Lithology : no data" in the main text field. The "Lithology" would inherit whatever modifications, if any, were made to the Color, Bold, Italicize, and Underline fields located to the right of the Heading: field, while the "no data" would inherit whatever modifications, if any, were made to the Color, Bold, Italicize, and Underline fields located to the right of the word Text:.
- 3. Type the text of your Annotation into the Annotation Builder window's main text field.

If you wish to have a box drawn around the Annotation, activate the Box check box 🔽 in the Annotation Builder window.

4. Define the area of the layer where the Annotation will appear by: a) placing the mouse pointer at the desired depth; b) 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; c) releasing the left mouse button.

Show Select Box - The Show Select Box check box 🗹 is activated to display the red dot overlying each of the Annotations. The red dots are displayed to help the user click on specific Annotations for editing within the

Annotation Builder window. The Show Select Box check box 🔽 is activated by right clicking once anywhere within the log to activate the pop-up menu and then selecting **Display** followed by **Select Box**. <u>Note</u>: You can make changes to the **Annotations** at any time by **clicking** once on the **Annotation** itself in order to display it in the **Annotation Builder** window for editing purposes.

5. Press the **Esc** key on the keyboard to exit from the **Annotation Builder** window.

Drawing a Line...

A Line can be associated with an existing Annotation or it can exist on its own.

1. **Click** on **Log Layer**, under the **Edit** menu selection, to activate the Annotation Builder window. **Right click** anywhere within the log to activate the pop-up menu.

Log Layer Annotations	
Delete	
🗸 Line Mode	
Text Mode	
Display	۲I
Change Font Properties	

2. Select Line Mode from the pop-up menu and the Line radio button • and check box • within the Annotation Builder window will be activated.

<u>Note</u>: The **Text** and **Line** radio buttons[®] are used simply to prevent the user from working on both the **Text** and the **Line** functions at the same time, i.e. the user can only work on the function that has had its radio button activated.

- 3. Click on the spot where you wish for the Line to begin, hold down the mouse button and then drag the mouse pointer to the spot where you wish for the Line to stop.
- 4. Release the **left** mouse button and the **Line** will be drawn accordingly.

<u>Note</u>: Every Line, whether it exists on its own or is affiliated with a given Annotation, must originate from within a <u>new</u> Annotation Builder window each time.

5. Press the **Esc** key on the keyboard to exit from the **Annotation Builder** window.

Editing Annotations

- 1. Click on Log Layer, under the Edit menu selection, to activate the Annotation Builder window.
- 2. Click on the **List** button to activate a list of all the annotations that have been created in a log layer and double click on the desired annotation. OR Click on the Annotation itself to display it in the Annotation Builder window
- 3. To change the Font Size of the Annotation now being displayed in the Annotation Builder window, simply select a

new Font Size from the **Font Size** drop box, click on the **Save** button or press ALT-S, and the Font Size of the selected Annotation will be changed accordingly.

<u>Note</u>: The Change Font Size selection in the pop-up menu should only be used to change the Font Size for <u>multiple</u> Annotations.

4. To change the text of the Annotation now being displayed in the Annotation Builder window, simply edit the

Annotation within the Annotation Builder window's large text field and then click on the Save button or press ALT-S when you are finished.

Note: If you wish to edit any other Annotation parameters, including the Display Scale, Line Thickness, and Line

Style, simply make the necessary changes within the Annotation Builder window, click on the Save button or press ALT-S and the Annotation will be changed accordingly.

If you wish to modify the Annotation further, you can use the Heading, Color, Bold, Italicize, and Underline fields to modify the appearance of the Annotation/Lithology Description header and/or text. For example,

The Bold b check box 🔽 can be activated to bold the Annotation header and/or text, the Italic i check

box can be used to italicize the **Annotation** header and/or text, and the <u>Underline</u> u check box can be used to underline the **Annotation** header and/or text. Moreover, the **Annotation** header and/or text may also be assigned different colors selected from the **Color** drop box fields.

- Decide how **Power*Log / Core & Curve** will distinguish what portion of the **Annotation** is the header and what portion is the text by inserting a character, most often a colon":", in the **Heading:** field to indicate the separation of the header from the **Annotation** text. This is applicable to every line in the **Annotation** and you can have numerous headers as a result.
- <u>For example</u>: If you used the colon (:) displayed in the Heading: field by default, as your header, and then typed "*Lithology : no data*" in the main text field. "*Lithology*" would inherit whatever modifications, if any, were made to the Color, Bold, Italicize, and Underline fields located to the right of the Heading: field, while the "*no data*" would inherit whatever modifications, if any, were made to the Color, Bold, Italicize, and Underline, if any, were made to the Color, Bold, Italicize, and Underline fields located to the right of the word Text:.
- 5. Press the Esc key on the keyboard to exit from the Annotation Builder window, when you are finished.

Resizing Annotations

- 1. Click on Log Layer, under the Edit menu selection, to activate the Annotation Builder window.
- 2. Click on the List button to activate a list of all the annotations that have been created in the log layer and double click on the desired annotation. OR Click on the Annotation itself to display it in the Annotation Builder window
- 3. Place the mouse pointer over one of small boxes (■) used to define the outline around the Annotation 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, release the mouse button and the Annotation will be redrawn within its newly defined area.
- 5. Press the **Esc** key on the keyboard to exit from the **Annotation Builder** window, when you are finished. **Moving Annotations**
- 1. Click on Log Layer, under the Edit menu selection, to activate the Annotation Builder window.
- 2. Click on the **button** to activate a list of all the annotations that have been created in a log layer and **double click** on the desired **annotation**.
- 3. OR Click on the Annotation itself to display it in the Annotation Builder window
- 4. Place the mouse pointer <u>inside</u> the outline surrounding the selected **Annotation** on the **Log** and the mouse pointer will transform into the shape of a cross with four (4) arrows.
- 5. Click and drag the mouse pointer to the Annotation's new position, release the mouse button, and the Annotation will be redrawn at its new location.

6. Press the **Esc** key on the keyboard to exit from the **Annotation Builder** window, when you are finished. **Deleting Annotations**

- 1. Click on Log Layer, under the Edit menu selection, to activate the Annotation Builder window.
- 2. Click on the List button to activate a list of all the annotations that have been created in a log layer and double click on the desired annotation. OR Click on the Annotation itself to display it in the Annotation Builder window

<u>Note</u>: If the Annotation you wish to delete is displayed in the Annotation Builder window, simply click on the Delete button to delete the selected Annotation.

- 3. **Right click** anywhere within the **log** to activate the pop-up menu.
- 4. Click on Delete selection and you will receive the following system message, "Do you really want to DELETE?"
- 5. Click on the **Yes** button and the selected Annotation will be deleted accordingly.
- 6. Press the Esc key on the keyboard to exit from the Annotation Builder window, when you are finished.

Globally Changing Annotation Font Properties...

- 1. Click on Log Layer, under the Edit menu selection, to activate the Annotation Builder window.
- 2. **Right click** anywhere within the **log** to activate the pop-up menu.

	Change Annotation Font Properties 🔀
	UWI: ABC Oil 12-25
	Group ID: lithtext
	(0 to 0 for ALL annotations)
	Interval: 🔲 to 🛛
	Font Size: 10 💌
	Heading: 🗄 red 💌 🗖 🗄 i 🗆 ι
	Text: black ▼ □ b□ i□ ι
Log Layer Annotations	Display 0 ▼ Scale:
Delete	Change Cancel
Line Mode	
 Text Mode 	
Display 🕨	
Change Font Properties	

- 3. Select **Change Font Properties** from the pop-up menu and the **Change Annotation Font Properties** window shown above will be activated.
- 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. Select a new font size for the Annotation(s) from the Font Size drop box.
- 6. The user can change the heading indicator, the color of the heading and text fonts as well as changing the font type to **bold** (b), *italic* (I) and <u>underline</u> (u)
- 7. Click on the **Change** button to modify the font properties of the selected Annotation(s).

Chapter Three - View Menu Depth View Mode

Changes the depth view of Power*Log or Power*Curve according to your needs. The Power*Log or Power*Core lithology logs can be viewed and printed in Measured Depth, Subsea Level or True Vertical Depth. The Power*Curve lithology log can be viewed and printed in Measured Depth, Vertical Section (along the calculated target azimuth) or Open Hole Depth (calculated from last casing data entry report window). These views are dependant on whether you have survey data entered and if you have calculated or entered in the TVD / Vertical Section fields in the Survey points window. There are two ways to change your depth views. They are both outlined below.

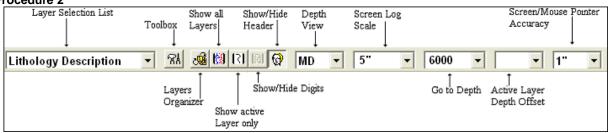
Procedure 1

 Click on Depth View Mode, under the View menu selection to activate the pop out menu and then click on the desired depth view to display the active log in MD (Measured Depth), TVD (True Vertical Depth), SSL (Sub Sea Level Depth) for Power*Log and Power*Core. In Power*Curve you will have the option to select from the desired depth view to display the active log in MD (Measured Depth), VS (Vertical Section Depth) or OH (Open Hole Depth). This will change the logs screen presentation. You will notice that the depth layer shows the depths with either an "m or ft" followed by "(ssl)" in subsea level view, "(tvd)" in true vertical depth view, "(vs)" in vertical section view or "(oh)" in open hole depth view.

View		
Depth View Mode	►	🖌 MD
Go to Depth		TVD
Log Scales	►	SSL
Screen Scale Accuracy	►	VS
Layers Organizer		ОН
Show Active Layer		
Show All Layers		
Show/Hide Digits		
Show/Hide Header		
🗸 Toolbar		
 Selection Bar 		
🖌 Import Toolbar		
✓ Export Toolbar		
RTF Toolbar		
🖌 Status Bar		
Mouse Cross hairs		
Line Toolbar		

N.B. The SSL, TVD, VS, and OH views are calculated from the directional surveys entered into the wells data. You must also have the KB elevation if you wish to view the log in the SSL view. The user has the ability to setup the master survey group information from the existing survey sets they wish to utilize for these views.





MD 🔽]	MD 🔻	
MD		MD	
TVD		VS	
SSL	in Power*Log/Core and	OH	in Po

1. Click on the down arrow on the SSL in Power*Log/Core and In Power*Curve Depth View mode selection on the Selection Bar and select the desired depth view for your Log.

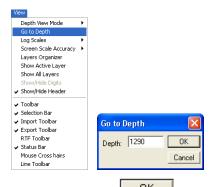
N.B.: Once SSL, TVD, VS or OH is activated the mouse pointer now indicates the view mode you are in as well as the measured depth that the mouse pointer is now pointing at.

Go To Depth

This allows you to go to a specific depth on the active log. There are two ways to do this procedure, as listed below:

Procedure 1

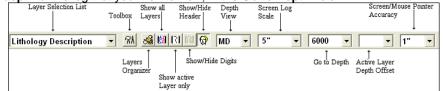
1. Click on Go to Depth, under the View menu selection, to activate the Go to Depth window for the active log.



2. **Type** in a **depth** in the depth field and then **click** on the **DK button**. This will place the depth specified at the top of the screen in Power*Log/Core or the left of your screen in Power*Curve.

Procedure 2

- 1. Click in the Go to Depth field.
- 2. **Type in the depth** of the log that you wish to view, in the **Go to Depth** field.



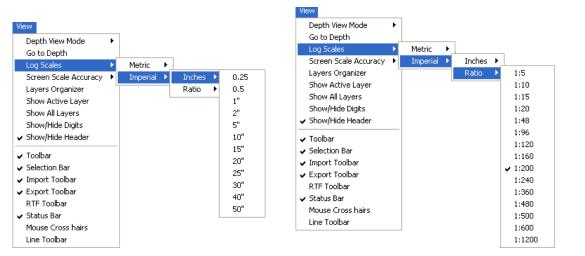
3. Once you have entered the desired depth, **press** the **Tab** key to exit from the **Go to Depth** field and the depth that you entered will then be displayed at the top of the log.

Log Scales

Allows the user to change the depth scale of the active log. Screen Log depth scales can be chosen from the menu and can also be type in the second method. The screen depth scales vary from 1:5 to 1:5000 (metric). There are two ways to do this procedure. They are both outlined below.

Procedure 1

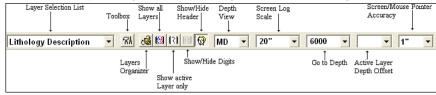
Click on Log Scales, under the View menu selection, to activate the **pop out menu** and then click on the log scale you want for the active Log. This will refresh your log with the new Scale.



Note: This list is a partial list of the scales that can be displayed. To get the ability to display the log at any scale between 1:5 and 1:5000 refer to Procedure 2.

Procedure 2

- 1. Click in the Log Scales field.
- 2. Select a scale from the list by clicking on it, or by typing in a scale in the Log Scales field.



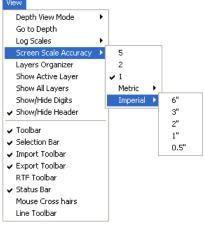
3. Depress the Tab key on your keypad. This will refresh your log with the new Log Scale.

Screen Accuracy

Varies the depth increment of the log according to your specifications. This increases or decreases the accuracy of your mouse pointer, while locating more specific depths with your mouse. There are two ways to do this procedure. They are both outlined below.

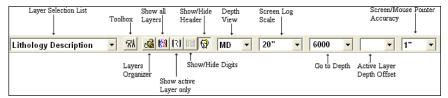
Procedure 1

1. Click on Screen Scale Accuracy, under the View menu selection, to activate the **pop out menu** and then click on the screen scale accuracy you want for the active Log. This will change the mouse's accuracy.



Procedure 2

1. Click on the Screen Accuracy field to activate the drop down menu.



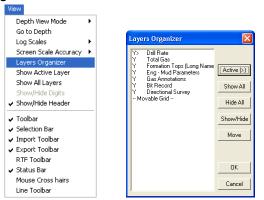
2. Select an available increment from the **Screen Accuracy** drop down menu by clicking once on the desired increment and your selection will be displayed within the **Screen Accuracy** field accordingly.

Layers Organizer

Allows you to choose which layers of the active track are active or inactive and shown or hidden.

Click on the track for which you wish to view the layers and the selected track will be highlighted with a green border.

Click on Layers Organizer, under the View menu selection, or click on the Layers Organizer button on the Toolbar to activate the Layers Organizer window for the active track.



The order of the layers on this list determines the order in which the layers are drawn on the track. The layer at the top of the list is drawn last and the layer at the bottom is drawn first. It's a good idea to put the most important layers nearest the top of the list, so that when drawn they are on the top. Remember that the active layer displays its grid pattern.

The layers that are shown on the track are marked with a "Y", the hidden layers are marked with an "N", and the active layer is denoted with a ">".

To s	show all layers, click on the Show All button. To hide all layers, click on the Hide All button. To toggle a					
spe	cific layer between show and hide, highlight the layer and click on the Show/Hide button . You may also double					
clic	click on a layer to change its current state. To make a layer active, highlight it and click on the button.					
Мо	Moving a Layer					
Highlight the layer and click on the Move button , which will then display, Move Start Then, click on the layer that you wish to position the moved layer above.						
Moving the Grid for an Active Curve layer						
1.	Make a curve layer active by highlighting a curve layer and clicking on the button					
2.	Highlight the Movable Grid selection and click on the Move button , which will then display,					
3.	Click on the layer over which the grid pattern will be placed and the Movable Grid selection will then move one line above the selected layer.					
4.	Click on the DK button to exit from the Layers Organizer window.					

Show All Layers

Displays every log layer that exists in your active track

To Show All the Layers of a given Track...

- 1. Click on the track you wish to view to make it active and it will be highlighted with a green border.
- 2. Click on Show All Layers, under the View menu selection, or click on the Show All Layers button on the Toolbar.

Show Active Layer

Enables only the active layer, within the currently active track, to be seen on screen

- 1. Click on the track you wish to view to make it active and it will be highlighted with a green border.
- 2. Click on Show Active Layer, under the View menu selection, or click on the Show Active Layer button on the Toolbar.

Show/Hide Header

Toggles between displaying the Header and removing it from the viewing area

Click on Show/Hide Header, under the View menu selection, or click on the Show/Hide Header button on the Toolbar.

Show/Hide Digits

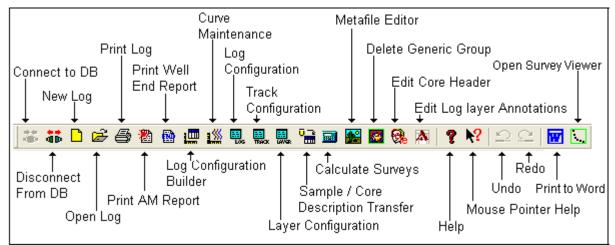
This function will either display or hide digits from the grid of an active curve layer on your log.

Click on Show/Hide Digits, under the View menu selection, or click on the Show/Hide Digits button on the Toolbar.

Note: This function only works for Curve layers on the log.

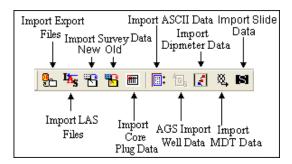
Toolbar

Turns the Toolbar on and off. This toolbar is dock able and can be moved to different places on the screen. **The Power*Log / Core & Curve™ Toolbar...**



Import Toolbar

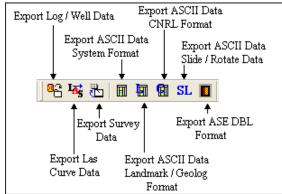
Turns the Import Toolbar on and off. This toolbar is dock able and can be moved to different places on the screen. **The Power*Log / Core & Curve™ Import Toolbar...**



Export Toolbar

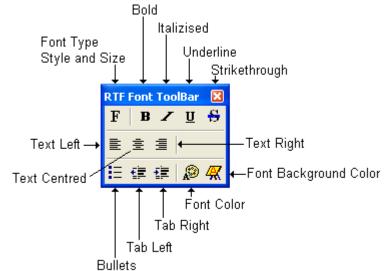
Turns the Export Toolbar on and off. This toolbar is dock able and can be moved to different places on the screen.

The Power*Log / Core & Curve™ Export Toolbar...



RTF Font Toolbar

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.



Status Bar

Turns the Status Bar, located at the bottom of the Power*Log / Core & Curve[™] screen, on and off. **This is the Power*Log / Core & Curve[™] Status Bar...** The **Status Bar** displays system status and any error messages in the lower left corner of the screen. If there are no errors the status bar will indicate "For Help, press F1".

For Help, press F1 pgeology UPDATE KB: 597.6 //

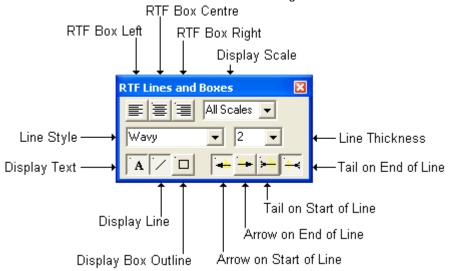
Note: The KB Elevation is displayed in the lower right corner of the Status Bar

Mouse Cross hairs

Turns the Mouse Cross hairs on and off that follow the mouse around the screen. This can be helpful when the user would like to line up certain aspects of the core / striplog.

RTF Line and Boxes Toolbar

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.



Chapter Four - Reports Menu **Sample Description**

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.

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

Sample Description		×
Save Undo New Del First Pr	ev ? Next Last	Dictionary
Auto Next Auto Inc 🔽 Ascend		<u> </u>
415 5 410	to 415 Dol	40 %
Short Description	% Lithology:	Fo Long Desc
m brn, occły dk brn, crpxl, v arg, com	rthy por (1-3%), com brn o stng, fr orng yel flor, fr stng mky yel cut fl	lor.
]		~
Long Description		
Dolomite		Fo Short Desc
	wn, cryptocrystalline, very argillaceous, common earthy porosity (1-3 y yellow fluorescence, fair streaming milky yellow cut fluorescence.	123) <u> </u>
Transfer Options		
Automatic Description transl	ier	
Transfer to Annotation Group:	lithtext5	•
🔽 Transfer Depth Range	🔽 Top Depth Only 🛛 🗌 Transfer % 🔽 Transfer Short F	orm

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 with the Base depth value. This will only be

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

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	d mean :	selecting	either the	e <u>N</u> ew	button or the Start New Record in the save options window. If a Rock	
Туре	Type is present in the Rock Type field, prior to using these buttons, that Rock Type and its associated data will be					
asso	ciated w	ith the ne	w depths	5.		
	Interva	al 🗌				

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

Lithology: button takes the correct Rock Type abbreviation and places the rock type in its associated field. If The 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.

Chapter Four – Report Menu, page 178

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

Automatic Sample Description Transfer Options

ransfer Options 🛛 🗸 🗸 View of the security			
Transfer to Annotation Group:	lithtext1		•
🔽 Transfer Depth Range	🔽 Top Depth Only	🔲 Transfer %	✓ 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 group from this drop box.

Note: 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 I when activated will transfer the from and to depth interval 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 Men activated will transfer the rock % to the log.

The Transfer Short Form check box 🗹 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 **New** 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

Lithology: 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.

Note: 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 __________ button or press ALT-N, then click on the __________ button or the _________ button or the __________ button, and repeat Steps 3 to 8.

<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 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 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.

<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 **Lithology Description** layer are shown below. To

access this window, click on the **Rever Configuration button** on the **Toolbar**, when the layer is active.

Antine Laws Confirmation - Eligibulian Descriptions 2	Active Layer Configuration [Lithology Description]
Active Layer Configuration [Lithology Descriptions] Image: Configuration [Lithology Descriptions] Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo Data Type: Name: Lithology Descriptions Image: Configuration Display Layer Name or Curve Scale on Track Foreground Color: Image: Configuration Ø Show Layer on Track Depth Diffset: Display Scale Charge Line Indicator Display Scale Charge Line Indicator Display Scale con non-active layers Display Scale con non-active layers Ø Display Full Logarithmic Scale Display Full Logarithmic Scale Display Scale Sind	Active Layer Configuration [Lithology Description] Layer - Display Settings Curve Definitions Layer - Display Settings Curve Definitions Save Undo Annotation Group Directional Survey [kthtext1 Dip Meter Group Generic Category Graphics MDT Run No Visual Range (Energy)
	OKHelp

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			
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		
Sh is predy dk, gy, micmica, carb, sile, fie. Sa Iam are thrn (Camm) and are predy Ib gy, f - c gr, occly vf gr, py stt, sbang - sbridd, qtz, com micas fik: abrt sils cmt, com cly & pyric mtx, predly disaggid, predly tt / ns.	s, mnr fid,		
Long Description			
Shale with minor Sandstone laminae.	To Short Desc		
Shale is predominately dark gray, micronicaceous, carbonaceous, siliceous, fissile. Sandstone lammae are timin (Smm) and are predominately light gray, fine to coarse grained, occasionally very fine grained, poorly solided, subangulad to subrounded, quartz, common micraceous filakes, minor feldspar, abundant siliceous cement, common clay and pyritic matrix, predominately disaggregated, predominately tight with no shows.			
Transfer Options			
Automatic Description transfer			
Transfer to Annotation Group: lithtext1	•		
✓ Transfer Depth Range ✓ Top Depth Only ✓ Transfer Short	t Form		

Dictionary

The **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 implemented when the record is saved and the Start New Record option is chosen. 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.

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

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

Transfer Options		
Automatic Description transf	er	
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 I when activated will transfer the from and to depth interval to the log.

The **Transfer Top Depth Only** check box M when activated will transfer only the from depth interval to the log. The Transfer Short Form check box 🗹 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.
- The user must fill in the Mandatory fields in the core window and save this record before you can click on Core 2. 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.
- 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.

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

POWER

Note: 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.

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

Field Restriction Table:

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

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.

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 Core **Description** 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 [Lithology Descriptions]	Active Layer Configuration [Lithology Description]
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age 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: Annotation Name: Lithology Descriptions UWL Image: Show Layer on Track Ø bisplay Layer Name or Curve Scale on Track Foreground Color: black Image: Display Scale One on Track Ø bisplay Vertical Orientation (Layer Name) Display Backup scales Display Scale Placements Ø bisplay Scale Scale on non-active layers Display Scale Placements Ø bisplay Deth-Axis Grid Display Deth-Axis Grid	Save Undo Annotation Group Directional Survey Detailed Lithology Group lithtext1
OK Cancel Help	OK Cancel Help

^{3.} Click on the Delete button.

Abandonment Plug

This is where you record Abandonment Plug data. This information can be printed in your Well End Report, but cannot be displayed on the log at this point in time.

This is the Abandonment Plug Report window:

Abandonment P	lug 🛛 🔀			
Save Undo New Plug # 3 Cement Amount (tonnes) 8.6	Del First Prev ? Next Last Interval: 1788 to 1644 Volume (m²) Density (kg/m) 6.8 1830			
Blend: Class 'G' cement + 0.5%D65 + 0.1%D13				
Plug Down Date Tim	ne: Jul 13, 1998 01:15			
Logging Company:	Plug Logging Inc.			
Logging Rep:	Gerald Underling			
Plug Felt:	1605 Date Time: Jul 13, 1998 03:00			
Remarks:	No problems. Hole capacity a little smaller than anticipated.			

Adding an Abandonment Plug

- 1. Click on Abandonment Plug 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 **Shortcut Options** system window.

Editing an Abandonment Plug

- 1. Click on the **Plug #...** button to view a list of Abandonment Plugs 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 **Abandonment 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 an Abandonment Plug

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

on the **Del Delete button**.

POWER

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 **Abandonment Plug** 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.

Field Restriction Table:

Plug Number	10	Character	Mandatory
Top Depth	5.2	Numeric	Mandatory
Base Depth	5.2	Numeric	Mandatory
Cement Amount	6.2	Numeric	Optional
Cement Volume	6.2	Numeric	Optional
Cement Density	6.0	Numeric	Optional
Cement Blend	40000	Character	Optional
Plug Down Date	DATE FORMAT		Optional
Logging Company	30	Character	Optional
Logging Rep.	30	Character	Optional
Plug Felt Depth	5.2	Numeric	Optional
Plug Felt Date	DATE FORMAT		Optional
Remarks	40000	Character	Optional

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	ed Data 🛛 🔀
Bit Records Pump Data	Drilling Parameters Bit Grading
Save Undo New De	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 right 💌
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 <u>not</u> 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.

Bit#6 WRB HR-S35 237.00 / 32 hrs Cond 6-6-WT-A-

6. 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.

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 and R	elated Dat	a			×
Bit Records Pump Data Drilling Parameters Bit Grading					
Save Undo New Del First Prev ? Next Last					
	#1	#2			
Model:	P275	P354			
Size:	500	300			
Туре:	triplex 💌	triplex 💌			
P Rod Diam (mm):	200	300			
Liner Size (mm):	245	345			
Stroke Len (mm):	123	234			
S.P.M.:	20	30			
Efficiency (%):	95	105			
Output (I/min):	13.6	15			
		Γ	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 supropriate 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 Rel	ated Data		×	
Bit Records Pump Da	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): Funnel Vis (sec/l): Drift Angle (*):	1000 1010 28 38	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 Parame	ters Bit Grading
Save Undo New Del First Prev	? Next Last
T/B/G Bit Grading System	
Teeth Bearing	Gage (O for in gage)
IADC Bit Grading System	
Inner: 4	Sealed Bearings: E
Outer: 3	(0 for in gage)
MDC: BT	Gage: 0
Location: A	Other DC: FC
	Reason Pulled (1): BHA
	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 **Bit#...** 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.
- 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 Bit#... button to view a list of Bit Records to date and then double click on the record that you

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

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

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

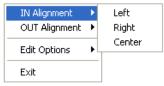
4. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the **Yes button**.

Aligning All Bit Records

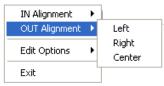
- 1. Make the **Bit Record** layer active within the **Drilling Progress** track by clicking on the track and then selecting the **Bit Record** layer from the **Layer Selection List** field.
- 2. Right click anywhere within the Bit Record layer to activate the pop-up menu.



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.



Moving Bit Records (Drag and Drop In / Out Info) on the Layer.

- 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. **Double click** on the **Layer** to activate the Bit Record Data entry window.
- 3. **Depress and Hold** the **CTRL key** (on the keypad) and **click** on the Bit record **In or Out information** and drag your mouse to a new location on the layer. You will see the outline of the data moving with your mouse pointer. **Let your mouse pointer go** and the information will be placed at that new location. **Release the Ctrl key.**
- 4. Repeat Step 3 to move more Bit Record In / Out Information on a layer.

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	6.0	Numeric	Optional
Mud Density Min	6.0	Numeric	Optional
Mud Density Max	6.0	Numeric	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

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IADC Major Dull C	2	Character	Optional
IADC Location	1	Character	Optional
IADC Show Cone #	4	Character	Optional
IADC Non-sealed B	1	Character	Optional
IADC Sealed Bearing	1	Character	Optional
IADC Gage	6.0	Numeric	Optional
IADC Other Dull C	2	Character	Optional
IADC Pulled Reasons	3	Character	Optional
IADC Remarks	50	Character	Optional

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 c	on the 🊟 Laye	Configuration buttor	n on the Toolbar , y	when the layer is active.

Casing Strings

All information involving Casing Strings is entered into this window. This information can be printed in your Well End Report, but cannot be displayed on the log at this point in time.

Casing St	rings		X
<u>S</u> ave Un	ndo <u>N</u> ew Del	First Prev ? Next	Last
String #	Type	Hole Size (mm)	Casing Size (mm)
1	Surface	▼ 311	219.1
Joint Info: (# of Joints; Ler	ngth (m); Size (mm); Weight	(kg/m))
12 Jts; ; 21 1 Shoe Jt;	9.1; 35.7 ; 219.1; 35.7		String #
Total Joints	Landed at	Casing Date Time	Plug Down Date Time
13	165.94	Sep 4, 1996 11:15	Sep 4, 1996 12:15
Cementing Details:	tonnes 1900 i	ie; 2m3 fresh water; 3m3 CV ‹g/m] SS1 cement; 4.2m3 [§ ent+2%S1 +0.75% B30 + 0.2	5.4 tonnes 1900 kg/m] 👘
Remarks:		roughout. 1m3 good cemenl -4.9 mPa. Held Solid.	returns. Squeezed

Adding a Casing String

- 1. Click on Casing String 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 **Save** button or press ALT-S and then click on the appropriate button out of the ensuing Shortcut Options window.

Editing a Casing String

- 1. Click on the String #... button to view a list of Casing Strings 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 **Casing String** window, make any changes you feel are necessary.
- 4. Click on the **Shortcut Options** system window.

Deleting a Casing String

1. Click on the String #... button to view a list of Casing Strings to date and then double click on the record that

you wish to delete. Once the selected record is displayed in the **Casing Strings** window, **click** on the **Delete button**.

POWER

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 **Casing String** 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 <u>Yes</u> **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.

Moving the Casing (Drag and Drop Data) on the Layer.

- 1. Make the **Casing** layer active within the track by clicking on the track and then selecting the **Casing** layer from the **Layer Selection List** field.
- 2. **Double click** on the Layer to activate the Bit Record Data entry window.
- 3. Depress and Hold the CTRL key (on the keypad) and click on the Casing information and drag your mouse to a new location on the layer. You will see the outline of the data moving with your mouse pointer. Let your mouse pointer go and the information will be placed at that new location. Release the Ctrl key.
- 4. **Repeat Step** 3 to move more Casing Information on a layer.

Field Restriction Table:

String Number	4.0	Numeric	Mandatory
Туре	30	Character	Mandatory
Hole Size	5.2	Numeric	Optional
Casing Size	5.2	Numeric	Optional
Joint Info	40000	Character	Optional
Total Joints	4.0	Numeric	Optional
Landed Depth	5.2	Numeric	Optional
Casing Date	DATE FORMAT		Optional
Plug Down Date	DATE FORMAT		Optional
Cementing Details	40000	Character	Optional
Remarks	40000	Character	Optional

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 Revealed a configuration button on the Toolbar, when the layer is active.

Active Layer Configuration [Casing Data]	×
Layer - Display Settings Curve Definitions Layer Sca Save Undo	ales Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Casing Data
Name: <mark>Casing Data ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track</mark>	UWT Foreground Color:
 Display Vertical Orientation (Layer Name) Display Backup scales Display Scale Change Line Indicator Display scales on non-active layers 	Depth Offset: Display Scale Placements Every Start at:
 Display Suits of mich nic Scale Display Full Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid 	
	OK Cancel Help

Core

Well Core information is entered into the window shown below. This information fills in the header of the Core Report and indicates the location of a cut core on the Core layer.

The actual **Core Descriptions** are entered into the **Core Description** window, located in the lower left corner of the Well Core Report Window. These **Core Descriptions** will then be used in the **Well End Report** print window's "*Core Report*", if the **Core Description Interval** (To) and **Interval** (From) depth values fall <u>between</u> the top and bottom of the cored interval.

<u>Note</u>: The **Core Report** will <u>not</u> print out, until you have completed at least **one** (1) **Core Description** that falls <u>between</u> the **Core's Interval** (To) and **Interval** (From) depth values.

Well Core				
Save Undo New Del	First Prev 1	? Next Last]	
Core # 1 Interval	Coring Date: N Length	far 7, 2001 Recovered	Core Diameter	Hole Size
Formations Cored: Wilrich, Coring Company: Anywh Service Reps: Joe Blc Bit Used Make Type BHI [C201	Bluesky ere Coring Comp ww Consultant Serial # 129R54	any Size 199	,	Color left click to change
Remarks: Coring Times: 12, 13, 23, 12 Core appears to be jamming				hat fact.
			Cor	e Descriptions

<u>Note</u>: The **Recovered** field should be filled in with a **Recovery Length** and not a **Percentage**. The percentage is calculated for you on the final report and on the **Core** layer on the log.

Adding a Core

- 1. Click on Core under the Reports menu selection.
- 2. Click on the button or press ALT-N in the Well Core Window shown above 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 Core

- 1. Click on the **button** to view a list of **Cores** 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 **Well Core** window, make any changes you feel are necessary.
- 4. Click on the **Shortcut Options** system window.

Deleting a Core

1. Click on the **Core #...** button to view a list of **Cores** to date and then **double click** on the record that you wish

to delete. Once the selected record is displayed in the **Well Core** 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 **Well Core** window. Then, **click** on the **Del**

Delete button.

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

Core Number	20	Character	Mandatory
Coring Date	DATE FORMAT		Optional
Top Depth	5.2	Numeric	Mandatory
Base Depth	5.2	Numeric	Mandatory
Recovered (meters)	5.2	Numeric	Mandatory
Core Outside Diameter	5.3	Numeric	Optional
Hole Size	5.3	Numeric	Optional
Formation	50	Character	Optional
Coring Company	50	Character	Optional
Service Rep.	50	Character	Optional
Bit Make	15	Character	Optional
Bit Type	10	Character	Optional
Bit Serial Number	15	Character	Optional
Bit Size	5.3	Numeric	Optional
Remarks	40000	Character	Optional
Digital Curve	30	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 **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 [Core]	
Layer - Display Settings Curve Definitions Layer Sc. Save Undo Name: Core C Display Layer Name or Curve Scale on Track Show Layer on Track C Display Vertical Orientation (Layer Name)	ales Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Core UWI Foreground Color: black Depth Offset: Display Scale Placements
 Display Backup scales Display Scale Change Line Indicator Display scales on non-active layers Display Full Logarithmic Scale Display Data-Axis Grid Display Data-Axis Grid 	Every Start at:
	OK Cancel Help

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	
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
Sh is predy dk gy, micmica, carb, sils, fis. Ss Iam are thrn (Camm) and are predy It gy, f - c gr, occly vf gr, py srt, sbang - sbrdd, qtz, com micas fiks abrit sils cmt, com cly & pyric mtx, predy disaggd, predy tt / ns.	s, mnr fid,
Long Description	
Shale with minor Sandstone laminae.	To Short Desc
Shale is predominately dark gray, micromicazeous, cathonaceous, siliceous, fissile. Sandstone lamase are hin (Sami) and are predominately light gray, fine to coases grained, occasional grained, poolly soited, subangular to subrounded, quartz, common micaceous fiakes, minor feldspar, al siliceous cement, common clay and pyritic matrix, predominately disaggregated, predominately light with	bundant
	~
Transfer Options ✓ Automatic Description transfer	
Transfer to Annotation Group: lithtext1	•
Image: Image I	Form

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

implemented when the record is saved and the **Start New Record** option is chosen. 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.

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

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

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

Automatic Description Transfer Options

Transfer Options	ier	
Transfer to Annotation Group:	lithtext1	-
🔽 Transfer Depth Range	🔽 Top Depth Only	✓ 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.

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 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.
- 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 <u>Interval...</u> button to view a list of Core Descriptions and then double click on the interval

that you wish to delete. 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.

Yes:

Field Restriction Table:

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

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.

Core Plugs Report Window

The Core Plugs Report will display the each individual data field on individual layers. You will find these tracks and layers associated with this report on the SYSTEM log. You can add some or all of these layers to any of your existing logs. The values can be entered into the report manually or can be imported through the Import Core Data Utility. *Refer to Import Core Data Utility*

Adding an Core Plug record manually

1. Click on Core Plugs under the Reports menu selection.

Core Plug Data 🛛 🔀					
\$ave Undo	New Del Fin	st Prev ? Ne	ext Last		List Core Plugs
Top Depth 10.75	Base Depth <mark>11.15</mark>	Sample No. <mark>20</mark>	Sample Code FD	Rep. Length	Act. Length
Bulk Mass Fr Oil 0.1384	action Water 0.056	Solids .896	Fluids 0.1944	Totals 0.1944	Calculate
Grain Mass F Oil 0.675	Water	Pore Vol. Oil .567	Water .453	Pore Vol. Fract Oil .235	ion Water .567
Gas Permeat KAIR .34	KMAX .23	K90	KV .35		
Density Grain. 2567	Bulk 2678	Porosity Measured .324	Calculated	Helium .320	
Remark					
No Lost Core					
<					>
					Exit

- 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 **Shortcut Options** system window.

Editing an Core Plug

- 1. Click on the List Core Plugs button to view a list of Core Plugs 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.
- 4. Click on the **Shortcut Options** system window.

Deleting an Core Plug

Click on the List Core Plugs button to view a list of Core Plugs 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 Del Delete button.
 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 Delete button.
 The user will be prompted with a confirmation "Do you really want to delete?" Click on the Yes 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.

Directional Survey

Information regarding Directional Surveys is entered into this window. This information can then be printed out in the Print Well End Report window. Also this information is utilized to build a True Vertical Depth and Subsea Level Depth view log presentations in Power*Log and Power*Core. The tie-in and kick-off information is critical to these calculations as well as the Target Azimuth and the Dog Leg Severity characteristics. Also the choosing of which survey group/groups you wish to use to do these calculations with in the Master Survey Group.

The information entered into can be used to produce four (4) separate reports as well as the TVD and SSL depth view Power*Log/Core presentations. The "*Directional Surveys*" report uses both the Groups information and its survey points. The "*Directional Survey Points*" report and the "*Deviation Survey Points*" uses the survey points only with two pieces of information (Survey Type & Mode) out of the group data entry window. The User can also print out the Master Survey Groups Survey points.

Directional Survey	×		
Save Undo New Del First Prev ? Next Last	Survey Points Master Survey Group Calculate TVD		
Survey Group 2 Service Company: MWD Anywhere Inc. Directional Driller: Dwight Francis, Francois Turcotte MWD Hands: Ian Simms, Claude Testo Survey Date Date Type Mode Feb 27, 2001 magnetic MWD *Dog Leg Seventy Calculation Method Calculation Method 30 * Target Azimuth 0	Kick-off *TVD *Inclination *Azimuth *Azimuth		
Iminimum curvature 30 340 0 EW: [26.08 meters East of the West boundary of Sec 25:4 User-defined TVD Calculation Calculate From Iminimum curvature Iminimum curvature Iminimum curvature Iminimum curvature Calculate minimum curvature Itie-in Iminimum curvature <			
Indicates fields that are required for Minimum Curvature and TVD calculations			

The Survey Points can be added through the layer Toolbox.

button or directly through the Directional Survey

Note: The Survey Group number is used to identify which group of survey points is associated with a specific Directional Survey layer on a log. Each Directional Survey layer can be associated with a specific group of survey points. This is done through the Directional Survey Layer Configuration window and selecting the group through its Dir. Survey...

button.

Master Survey Group

The **button** allows the user to build or compile the survey points from multiple or specific survey groups other than the default group 1.

The User Defined TVD Calculation portion of the window allows the user to define the default calculation method when the survey group's survey points are calculated.

Calculate TVD

The **button** activates the TVD calculations window which can calculate the survey group, calculate the Master Survey group, update the well path, and calculate all the TVD fields in the various report window.

Adding a Directional Survey Group

- 1. Click on Directional Survey under the Reports menu selection or click on the Directional Survey button located on the toolbar.
- 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 Directional Survey Group

- 1. Click on the Survey Group... button to view a list of Directional Survey Groups 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 **Directional Survey** window, make any changes you feel are necessary.
- 4. 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 Directional Survey Group

1. Click on the Survey Group... button to view a list of Directional Survey Groups to date and then double click on the record that you wish to delete. Once the selected record is displayed in the Directional Survey window,

click on the Delete button.

- 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 Directional Survey window.
- 3. Then, click on the Del Delete button.
- 4. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the <u>Yes</u> **button**.

Master Survey Group Button

Definition: The user can imagine the master survey group as a compilation of multiple survey groups to define the well from spud to total depth. Power*Suite has enabled the user to enter multiple set of surveys from different measuring devises. The user can then take points from all the sets to build a Master Set of survey points that best defines the well path. This group is then compiled and then used to represent Power*Log/Core in the TVD/SSL depth views. This survey set is also used to calculate or interpolate TVD values for all measured depth fields. If the user only has one survey set and has kept the group name as 1 then the Master Survey group does not have to be assembled.

How to Compile the Master Survey Group

The user must identify which Survey Groups they want used for the TVD / SSL depth views of Power*Log/Core. The user must identify which group(s) of surveys and the starting survey point in that survey group. Once this is done the application then creates a Master Survey group that contains all the survey points from all the groups and there surveys points and then uses these to create the TVD and SSL presentations.

The Tie In or Kick of the shallowest survey points Survey group is used as a starting or reference point.

Master Survey Group 🛛 🔀		
UWI	100153206323W500	
Top Depth	Survey Group	
145 990	1 2	
Top Depth 990	Select Survey Group]	
Add	Change Delete Calculate TVD Exit	

How to Add a Survey Group to the Master Survey Group

1. Click on the Master Survey Group button in the Directional Survey Window. This will activate the Master Survey Group window.

2. Click on the Select Survey Group... button. This will activate the Choose Directional Survey window.

Choose Directional Survey		
Jun 11, 2004 2 magnetic MWD May 4, 2004 1 magnetic MWD Jun 11, 2004 2 magnetic MWD	Query Select Clear Field Cancel	

3. Click on the Directional Survey group you wish to Add and then click on the Select button. This will activate the Choose Survey Point Window.

Choose Survey Start Point		
MD (TVD; Drift Angle; Azimuth)		
[1000 (631.02; 82*; 120]	Ϊ.	Query
990 (630.25; 80*; 120) 1000 (631.02; 82*; 120)	1	Select
1000 (631.02; 627; 120) 1009 (631.93; 85; 120) 1018 (632.51:87.5°; 120) 1027 (632.75; 83.5°; 120)	1	Clear Field
1027 (632.75; 89.5*; 120) 1035 (632.78; 90*; 120)		Cancel
	-	
1		

- 4. Click on the Survey point you wish to start with and then click on the **Select** button. This will place survey point's depth in the top depth field the Survey Group ID selected into the Survey Group ID field.
- 5. Click on the **button** and the Survey will be placed in the list.

Note: This Survey and all subsequent surveys in this groups list will be added to the Master Survey Groups survey points until another Survey Group and its top depth has been added to the list.

How to Change a Survey Group top Survey Point

- 1. Click on the Master Survey Group button in the Directional Survey Window. This will activate the Master Survey Group window.
- 2. Highlight or **click** on the survey point you wish to change.

Select Survey Group...

3.

Click on the

button. This will activate the **Choose Directional Survey** window.

	Choose Directional Survey		
	Jun 11, 2004 2 magnetic MWD	Query	
	May 4, 2004 1 magnetic MWD Jun 11, 2004 2 magnetic MWD	- Select	
	Jun 11, 2004 2 magnetic MWD		
		Clear Field	
		Cancel	
		<u> </u>	
		9	elect hutten This will
Click on the Directional Surv	vey group you wish to Change and then cli	i ck on the 🛄	button. This will
activate the Choose Survey	Point Window.		
Cho			
	ose Survey Start Point		
ме	o <mark>se Survey Start Point</mark>) (TVD; Drift Angle; Azimuth)		
	ose Survey Start Point) (TVD: Drift Angle: Azimuth) 10 (631.02: 82*, 120)	Query	
	ose Survey Start Point) (TVD: Drift Angle: Azimuth) 10 (631.02: 82*, 120)	Query Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)		
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point) (TVD: Drift Angle: Azimuth) 10 (631.02: 82*, 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	
MC Tati Geo Dec	ose Survey Start Point (TVD; Dnit Angle; Azimuth) 0 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120) 10 (631.02; 82"; 120)	Select	

- Select Click on the new Survey point you wish to start with and then click on the button. 5.
- This will place survey point's depth in the top depth field and the Survey Group ID selected into the Survey Group 6. ID field.
 - Change. Click on the

4. Click

7.

button and the new Survey point will be placed in the list.

How to Delete a Survey Group

Master Survey Group

- button in the Directional Survey Window. This will activate the Master Click on the 1. Survey Group window.
- Highlight or Click on the Survey points Start depth and Group ID you wish to Delete and then click on the 2. Delete

button. This will delete the survey point and Groups ID from the list.

How to Calculate the Master Survey Group Survey Points

If the Master Survey group has been altered in any way and the user exits the window they will be prompted with a calculation window. The user will have to recalculate the master survey group for your changes to take affect.

- Master Survey Group
- button in the Directional Survey window. This will activate the Master 1. Click on the Survey Group window.

2.	Click on the	Calculate TVD	button. This will activate the TVD Calculation v
			TVD Calculation
			Directional Survey
			Survey Group 1 Calculation Method: minimum curvature From: tie-in
			✓ Calculate Master Survey Group Calculation Method: Mell Path ✓ Calculate Well Path
			Well Path Curves Start Depth: Units: TVD
			Calculate TVD Attributes TVD Attributes Formation: Log Top TVD Formation: Sample Top TVD Morring Report: TVD Depth Sidewall Core: TVD Depth S

Directional Survey Portion

The User has the ability to have the program calculate the Directional Survey group, select which survey group they wish to calculate, which calculation method either minimum curvature or drift angle calculations and from either tie-in or kick off co-ordinates.

Exit

Calculate

Procedure...

- If the user wishes to calculate a Survey Group 🔽 Calculate Directional Survey activate the Check box 🗹 in this 1. portion of the window.
- Survey Group... 2. If the default survey group is not correct **click** on the **button** and select the survey group you wish to calculate from the List.
- 3. Select the Calculation method from the drop box. (Minimum curvature calculation method must have an azimuth filled in for every survey point and will calculate all the fields in the Survey Points Window, otherwise use drift angle to get only the TVD field completed in the Survey Points Window.)
- 4. Select the From Tie-In or Kick-Off co-ordinates

The defaults are picked up from the User defined TVD Calculation portion of the 'Directional Surveys Report', found under the menu item "Reports". Kick Off is selected by default if not filled in. Remember that the data required for the Kick Off or Tie In reference is entered in the 'Directional Surveys Report', found under the menu item "Reports". Kick Off is selected by default.

Calculate Master Survey Portion:

The program will calculate the Directional Surveys into a Master Survey [SYSTEM] group. The user can determine which calculation method to use. The choices are either minimum curvature (all surveys have an azimuth) or drift angle calculations and from either tie-in or kick off co-ordinates. The Master Survey Group can be compiled with points from different Survey Groups. The Master Survey group is built in the Directional Survey window. If there is only one survey group this procedure is not required. The Master Survey group will be built, utilizing Group 1 (one) surveys and if that does not exist then the first survey group record in the table. Those default surveys will then be used to perform all TVD / SSL Calculations within the application. Procedure...

- Select the Calculation method from the drop box. (Minimum curvature calculation method must have an 1. azimuth entry for every Survey Point, otherwise use drift angle to get only the TVD field completed in the Survey Points Window.)
- 2. Select the From Tie-In or Kick-Off co-ordinates.

POWER

The defaults are picked up from the User defined TVD Calculation portion of the 'Directional Surveys Report' window from the survey group that has the shallowest survey point, Kick Off is selected by default if not filled in. Remember that the data required for the Kick Off or Tie In reference is entered in the 'Directional Surveys Report', found under the menu item "Reports". Kick Off is selected by default.

Well Path Portion

The Well Path for lack of better terms will update any curve on your log with either TVD or SSL data and will start at any depth required. It basically plots a curve with respect to measured depth and the survey data's TVD calculations which can also be converted to SSL if a KB elevation has been entered into the Well Record located under the Edit menu.

Procedure...

If the user wishes to calculate or update the Well path curve Calculate Well Path activate the Check box in this portion of the window.

Well Path Curves...

- 2. Select which curve you wish to populate with this data by clicking on the **button** and selecting the curve from the existing curve in the database.
- 3. Type in the Start depth for which the curve will first appear on the log.
- 4. Select which units you would like this curve to be plotted or updated with from the Units selection box. TVD is the direct calculations from the survey points. SSL are converted with respect to the wells Kelly Bushing Elevation.
- 5. Select the Survey Indicators Check box 🔽 If the user wishes to have the survey points displayed at 45 degrees to the selected well path curve.

TVD Attributes Portion

Procedure...

1. If the user wishes to calculate or update the specified TVD fields within the various windows throughout the

Reports Calculate TVD Attributes activate the Check box ^C in this portion of the window.

The program is only able to determine the TVD at any depth covered by the directional surveys. Power*Log / Core & Curve have several windows in which the measured depth and corresponding true vertical depth are asked for. If you have directional surveys over that interval, the program will calculate the exact TVD for you. If it is outside the range of your surveys, it will be left as a manual entry.

- 2. Select or **click** on which fields (highlight) you wish to calculate for or recalculate if you have changed the survey data. Remember you have the ability to select all or unselect all.
- 3. Click on the Calculate button.

Field Restriction Table:

Survey Group	30	Character	Mandatory
Service Company	30	Character	Optional
Directional Driller	50	Character	Optional
MWD Hands	50	Character	Optional
Survey Type	20	Character	Optional
Survey Mode	20	Character	Optional
Survey Date	DATE	Default=Current	Optional
	FORMAT	Date	
Calculation Method	20	Character	Optional
Kick-off MD	10.5	Numeric	Required for calculations
Kick-off TVD	10.5	Numeric	Required for calculations
Kick-off Inclination	10.5	Numeric	Required for calculations
Kick-off Azimuth	10.5	Numeric	Required for calculations
Kick-off East meters	10.5	Numeric	Required for calculations
Kick-off North meters	10.5	Numeric	Required for calculations
Kick-off Section meters	10.5	Numeric	Required for calculations

Kick-off Dog Leg	10.5	Numeric	Required for calculations
Kick-off Latitude	5.7	Numeric	Optional
Kick-off Longitude	5.7	Numeric	Optional
Kick-off N/S	100	Character	Optional
Kick-off E/W	100	Character	Optional
Tie-in MD	10.5	Numeric	Required for calculations
Tie-in TVD	10.5	Numeric	Required for calculations
Tie-in Inclination	10.5	Numeric	Required for calculations
Tie-in Azimuth	10.5	Numeric	Required for calculations
Tie-in East meters	10.5	Numeric	Required for calculations
Tie-in North meters	10.5	Numeric	Required for calculations
Tie-in Section meters	10.5	Numeric	Required for calculations
Tie-in Dog Leg	10.5	Numeric	Required for calculations
Tie-in Latitude	5.7	Numeric	Optional
Tie-in Longitude	5.7	Numeric	Optional
Tie-in N/S	100	Character	Optional
Tie-in E/W	100	Character	Optional
Dog Leg Characteristic	4.0	Numeric	Required for calculations
Target Azimuth	5.2	Numeric	Required for calculations
Remarks	254	Character	Optional

Directional Survey Point Window

This window is accessed through the **Directional Survey Report** window, the **Well** window, or through the **Directional Survey** layer **Toolbox**. These points can be viewed on the log through a **Directional Survey** layer or can be printed from the **Print Well End Report** window. Directional Surveys can be imported from ASCII files supplied by Directional Drillers.

Directional Su	urvey Point			X
Save Undo New Del First Prev ? Next Last Calculate TVD				
Measured Dept	h Drift Angle	Azimuth	TVD	Display Depth
1047	87	341	702.4	1047
+N/-S Distance	+E7-W Distance	Vertical Section	Dog Leg Severity	Alignment
-309.49	553.35	-480.08	347.27	right 💌
🥅 Misrun				

Use the **Database Navigational Tools** to scroll through the existing records or **click** on the **Measured Depth** button to view a list of the survey points, that already exist within the database.

Adding a New Record

- 1. Click on Directional Survey under the Reports menu selection. Then click on the Survey Points button to activate the Directional Survey Point window shown above.
- 2. Click on the <u>New</u> button or press ALT-N.
- 3. Enter any appropriate information into the empty fields.

<u>Note</u>: If you have information for the *Measured Depth*, *Drift Angle* and *Azimuth* fields, the rest of the fields can be calculated for you.

See Chapter Five - Options Menu: Directional Survey Import - Overview

- 4. Select an Alignment, if you want to view the Directional Survey Point(s) on the track that contains the survey layer. The default Alignment is always <u>right</u>. However, if you select a <u>blank</u> Alignment from the Alignment field drop box, your Directional Survey Point(s) will <u>not</u> be displayed on the survey layer, but they will still be printed out through the Print Well End Report window.
- 5. The user can display the Survey data at a different depth than what the survey was take at if that depth is not the best place to show that data. **Type in a display depth** in the Display depth field and the information will be

shown according t the above alignment and the display depth field. The line where the survey data stays where the survey was taken.

Note: The information that is shown on the **Directional Survey** layer is a line that is always placed on the right side of the track at the **Measured Depth**, **Drift Angle**, **Azimuth**, and **TVD**. The rest of the information goes to the **Print Well End Report**.

- 6. Click on the **button or press ALT-S** and then **click** on the appropriate button when prompted with the **Shortcut Options** system window.
- After the record has been saved the user can then select the Angle or Minimum Curvature calculations from either the tie-in or kick-off points.

Note: The drift angle calculations uses minimum curvature but we assume an azimuth for all the survey points so we can do some TVD calculation's to produce interpolated TVD's as well as produce a TVD / SSL log.

Editing a Directional Survey Point

Measured Depth...

1. Click on the **button** to view a list of **Directional Survey Points** 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 s 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 **Directional Survey Point** window, make any changes you feel are necessary.
- 4. 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 Directional Survey Point

Measured Depth...

1. Click on the **button** to view a list of **Directional Survey Points** to date and then **double click** on the record that you wish to delete.

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 **Directional Survey Point** window. Then, **click** on the **Delete button**.

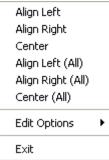
3. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the **Yes** button.

Indicating a Misrun

To indicate a Misrun, enter in the measured depth (MD) of the survey and simply check the **Misrun** check box is flag this survey as a misrun. Misruns will be excluded from any calculations performed on the surveys, and will be labeled in the appropriate **End of Well** reports.

Aligning All Directional Survey Points

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



3. Click on Align Left (All), Align Right (All) or Center (All) to align all the directional survey points accordingly.

Moving the Directional Survey data (Drag and Drop Data) on the Layer.

- 1. Make the **Directional Survey** layer active within the track by clicking on the track and then selecting the **Casing** layer from the **Layer Selection List** field.
- 2. **Double click** on the **Layer** to activate the Directional Survey Points Data entry window.
- 3. Depress and Hold the CTRL key (on the keypad) and click on the Directional Survey information and drag your mouse to a new location on the layer. You will see the outline of the data moving with your mouse pointer. Let your mouse pointer go and the information will be placed at that new location. Release the Ctrl key.
- 4. Repeat Step 3 to move more Directional Survey Information on a layer.

Calculating Directional Survey Points

To perform the Drift angle or Minimum Curvature calculations on your directional surveys, **click** on the **Calculate TVD**

button in the Directional Survey Points window. This will activate the TVD Calculation window.

TVD Calculation	×
UWI	100153206323W500
	Calculate Directional Survey
Survey Group	1
Calculation Method:	minimum curvature From: tie-in
Calculation Method:	Calculate Master Survey Group
weirath	Calculate Well Path
Well Path Curves	
Start Depth:	1000
Units:	TVD Survey Indicators
	Calculate TVD Attributes
TVD Attributes:	Formation: Log Top TVD Formation: Sample Top TVD
Select All	Morning Report: TVD Depth
Unselect All	Sidewall Core: TVD Depth Well Test: Base TVD
C	alculate Exit

Directional Survey Portion:

The User has the ability to have the program calculate the Directional Survey group, select which survey group they wish to calculate, which calculation method either minimum curvature or drift angle calculations and from either tie-in or kick off co-ordinates.

Procedure...

1.

- Calculate Directional Survey Activate the Check box I in this portion of the window.
- 2. If the default survey group is not correct, **click** on the **Survey Group... button** and select the survey group you wish to calculate from the List.

- 3. Select the Calculation method from the drop box. (Minimum curvature must have an azimuth and will fill in all the fields in the Survey Points Window, otherwise use drift angle to get only the TVD field completed in the Survey Points Window.)
- 4. Select the From Tie-In or Kick-Off co-ordinates

The defaults are picked up from the User defined TVD Calculation portion of the 'Directional Surveys Report', found under the menu item "Reports". Kick Off is selected by default if not filled in. Remember that the data required for the Kick Off or Tie In reference is entered in the 'Directional Surveys Report', found under the menu item "Reports". Kick Off is selected by default

Calculate Master Survey Portion:

The program will calculate the Directional Surveys into a Master Survey [SYSTEM] group. The user can determine which calculation method to use. The choices are either minimum curvature (all surveys have an azimuth) or drift angle calculations and from either tie-in or kick off co-ordinates. The Master Survey Group can be compiled with points from different Survey Groups. The Master Survey group is built in the Directional Survey window. If there is only one survey group this procedure is not required. **The Master Survey group will be built, utilizing Group 1** (one) surveys and if that does not exist then the first survey group record in the table. Those default surveys will then be used to perform all TVD / SSL Calculations within the application.

- 1. Select the Calculation method from the drop box. (Minimum curvature calculation method must have an azimuth entry for every Survey Point, otherwise use drift angle to get only the TVD field completed in the Survey Points Window.)
- 2. Select the From Tie-In or Kick-Off co-ordinates.

The defaults are picked up from the User defined TVD Calculation portion of the 'Directional Surveys Report' window from the survey group that has the shallowest survey point, Kick Off is selected by default if not filled in. Remember that the data required for the Kick Off or Tie In reference is entered in the 'Directional Surveys Report', found under the menu item "Reports". Kick Off is selected by default

Well Path Portion

The Well Path for lack of better terms will update any curve on your log with either TVD or SSL data and will start at any depth required. It basically plots a curve with respect to measured depth and the survey data's TVD calculations which can also be converted to SSL if a KB elevation has been entered into the Well Record located under the Edit menu.

Procedure...

- 1. If the user wishes to calculate or update the Well path curve Calculate Well Path activate the Check box in this portion of the window.
- 2. Select which curve you wish to populate with this data by clicking on the well Path Curves... button and selecting the curve from the existing curve in the database.
- 3. **Type in** the **Start depth** for which the curve will first appear on the log.
- Select which units you would like this curve to be plotted or updated with from the Units selection box. TVD is the direct calculations from the survey points. SSL are converted with respect to the wells Kelly Bushing Elevation.
- 5. Select the Survey Indicators check box !!! If the user wishes to have the survey points displayed at 45 degrees to the selected well path curve on their horizontal log.

TVD Attributes Portion

Procedure...

1. If the user wishes to calculate or update the specified TVD fields within the various windows throughout the

Reports 🔽 Calculate TVD Attributes activate the Check box 🔽 in this portion of the window.

The program is only able to determine the TVD at any depth covered by the directional surveys. Power*Log and Power*Curve have several windows in which the measured depth and corresponding true vertical depth are asked for. If you have directional surveys over that interval, the program will calculate the exact TVD for you. If it is outside the range of your surveys, it will be left as a manual entry.

2. Select or **click** on which fields (highlight) you wish to calculate for or recalculate if you have changed the survey data. Remember you have the ability to select all or unselect all.

3. Click on the Calculate button.

Directional Survey Points Window Field Restriction Table:

Measured Depth	5.2	Numeric	Mandatory
Drift Angle	4.6	Numeric	Optional
Azimuth	4.6	Numeric	Optional
TVD Depth	5.2	Numeric	Optional
N/S Distance	13.2	Numeric	Optional
E/W Distance	13.2	Numeric	Optional
Vertical Section	13.2	Numeric	Optional
Dog Leg Severity	4.2	Numeric	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 Directional Survey layer are shown below. To access

this window, click on the Layer Configuration button on the Toolbar, when the layer is active. Notice that this Directional Survey is directed at Reference ID 1 and its associated Survey Points.

Active Layer Configuration [Directional Survey]	Active Layer Configuration [Directional Survey]		
Active Layer Configuration [Directional Survey] Image: Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo Annotation Group Directional Survey Detailed Lithology Group Generic Category Graphics Dip Meter Group MDT Run No Visual Range (Energy) Generic Symbols	Active Layer Configuration [Directional Survey] Layer -Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo Data Type: Directional Survey		
OK Cancel Hep	OKCancelHeb		

Survey Prognosis

Information regarding the Prognosed Drilling of the well that was first designed by the Directional Drilling Contractor which will be followed during the drilling of the well. This report is designed to get the designed or prognosed well path into the Survey View application so there is some comparison between the actual well path and the prognosed well path. The Survey Group data is captured into this window.

Survey Points			
	Master Surv	ey Group	Calculate TVD
Kick-off	vier de O	×Azimuth 0	*TVD
	"Inclination -	"Azimuth -	"TVD
*+N/-S	×+E/-W	*Dog Leg	*Section
Latitude			
Longitude			
	oordinates relative	to boundary	
E/W.			
Tie-in *MD *+N/-S Latitude Longitude Sur N/S:	*Inclination ^o	*Azimuth ⁰ Pog Leg	*TVD *Section
E/W:			
e and TVD calculat	ions	Progna	sis
	*+N/-S Latitude Longitude Surface C N/S: E/W: Tie-in *MD *+N/-S Latitude Longitude Sur N/S: E/W:	*+N/-S *+E/-W Latitude	*+N/S *+E/-W *Dog Leg *+N/S *+E/-W *Dog Leg Latitude

N.B. The only data that is required in this window is the Survey group ID and you should identify it well as you will probably have to use the Import Survey Tool to import all the relative survey data or you will be typing a lot of data into the survey points into the Survey Points window.

The Survey Points can be added through the button or directly through the Directional Survey layer Toolbox. It would probably be easier to import the surveys from a *.csv file format.

Adding a Directional Survey Group

- Click on Survey Prognosis under the Reports menu selection.
- 2.
- **Click** on the **button or press ALT-N**. Type in a Survey group ID in the Survey Group field. In the example above we have used **Prog** and then **click** on 3.

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

Directional Survey Point Window

This window can only be accessed through the Survey Prognosis Report window, the Well window. Directional Surveys can be imported from ASCII files supplied by Directional Drillers. If they only have an Excel spreadsheet is must be first saved as a *.csv file format that can then be imported into the Prog Survey group or whatever character you supplied for the Survey Pronosis.

Directional Survey Point						
Save Undo New Del First Prev ? Next Last Calculate TVD						
Measured Dept	h Drift Angle	Azimuth ⁰	TVD	Display Depth		
1047	87	341	702.4			
+N/-S Distance	+E7-W Distance	Vertical Section	Dog Leg Severity	Alignment		
-309.49	553.35	-480.08	347.27	_		
🔲 Misrun						

Use the **Database Navigational Tools** to scroll through the existing records or **click** on the **Measured Depth** button to view a list of the survey points, that already exist within the database.

Adding a New Record

- 1. Click on Directional Survey under the Reports menu selection. Then click on the Survey Points button to activate the Directional Survey Point window shown above.
- 2. Click on the <u>New</u> button or press ALT-N.
- 3. Enter any appropriate information into the empty fields.

<u>Note</u>: You must type in all the data except for Dog Leg Severity which is not applicable to the Survey Views application.

4. 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 Directional Survey Point

Measured Depth...

- 1. Click on the **button** to view a list of **Directional Survey Points** 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 **Directional Survey Point** 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 Directional Survey Point

Measured Depth...

- 1. Click on the **button** to view a list of **Directional Survey Points** to date and then **double click** on the record that you wish to delete.
- 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 **Directional Survey Point** 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 **Yes button**.

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

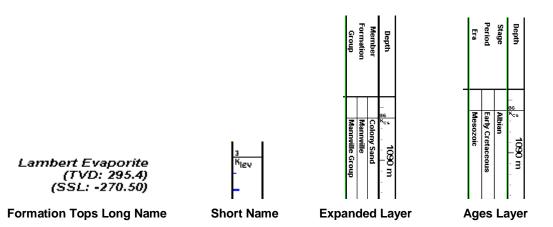
Well Formation				
Save Undo New Del Fire Short Long Group: Sephton I		t Last K.B. 24.9 Boundary Typ	Ground 21.1 ne: conf [conformable	Casing Flange 21.08
Formation t Tidsdale	dale Sand	Fault Typ Seq#: 0 L	····	oth:
Era mesozoic Period k [cretaceous]	Series lower Stage aptian	Subsea: -361.03	Tops MD Prognosis: Sample: 445	TVD 370 385.93
Age: 140 million years	Thickness MD: 77.50 TVD: 13.28	Calculate Thickness Annotat	Log: 445 Display O Prog. • Smp	385.93
Evaluation: Annotations Samples To Long Desc The Main Tidsdale Sandstone was encountered fairly close to the prognosed depth at 368.11m Image: 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 The Main Tidsdale Sandstone was drilled horizontally for 525m and encountered at least a minimum of 290m of good oil pay zones. These zones should and will produce oil at a significant rate. The porosity overall is quite good and there was no indication of water during any of the drilling of the drain section of this well. This is a zone of much importance and should be further evaluated on downhole logs.				
) *Note: Hold CTRL to drag display	position			

Well Formation Window - Overview

<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.

Group, Formation, and Member (short and long) - 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 MD- The user may enter the measured depth thickness of this formation into this field.

Thickness TVD – The user may enter the true vertical depth thickness of this formation into this field.



Button calculates the Measured Depth and True Vertical Depth thickness between this formation and the next formation in the list.

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

Tops Depth section - 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	Button – Click on the	Annotations	Button to activate the Tr	ansfer Annotations window from which
, , , ,	Lithology Descriptions i ontents for more inform		Evaluation and/or Conclus	sion fields. See "Transfer annotation" in
Evaluation - T	vne in the Formation F	valuation pertai	ining to the lithology etc.	You may use the short forms and

Evaluation - Type in the Formation Evaluation pertaining to the lithology, etc.... You may use the short forms and then click on the **To 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.

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

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 delete. Once the selected record is displayed in the **Formation** 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 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 <u>Yes</u> button.

Aligning All the Formation Tops

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

	Align Left	
	Align Right	
	Center	
	Align Left (All)	
	Align Right (All)	
	Center (All)	
	Edit Options	Þ
	E×it	
_		_

3. Click on Align Left (All), Align Right (All) or Center (All) to align all the Formation Tops accordingly.

Moving the Formation Top Data (Drag and Drop) on the Layer.

- 1. Make the Formation Top layer active within the track by clicking on the track and then selecting the Formation Top layer from the Layer Selection List field.
- Double click on the Layer to activate the Directional Survey Points Data entry window. 2.
- Depress and Hold the CTRL key (on the keypad) and click on the Formation Top information and drag your 3. mouse to a new location on the layer. You will see the outline of the data moving with your mouse pointer. Let your mouse pointer go and the information will be placed at that new location. Release the Ctrl key.
- 4. **Repeat Step** 3 to move more Formation Top Information on a layer.



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:

Group (short)	5	Character	Optional
Group	30	Character	Optional
Formation (short)	5	Character	Optional
Formation	30	Character	Mandatory
	5		
Member (short)	-	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 MD	10.5	Numeric	Optional
Thickness TVD	10.5	Numeric	Optional

Note: 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.

Note: 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.

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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

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 **Formations** layer are shown below. To access this

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

Active Layer Configuration [Formation Tops (Long Name)] Image: Display Settings Curve Definitions Layer Scales Data Group Ds; Formation and Age Display Dip Meter Definitions Save Undo Image: Formation Tops (Long Name) Image: Formation Image: Formation Name: Formation Tops (Long Name) Image: Formation Image: Formation Image: Formation Display Layer Name or Curve Scale on Track Foreground Color: Image: Formation Image: Formation Display Backup scales Display Scale Doing: Layer Name) Display Scale Change: Line Indicator Display Scale Change: Line Indicator Display Display Scale On active layers Display Depth-Axis Grid Every Start at: Display Depth-Axis Grid	Active Layer Configuration [Formation Tops (Short Name)] Image: Configuration [Formation States Color Name)] Layer - Dirplay Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Dirplay Dip Meter Definitions Save Undo Formation Dirplay Age Dirplay Formation Long Name Dirplay on Layer Format 2 Formation Formation Control of Cont
Format 1: Short Names Format 2: Long Names	DK Cancel Hep

<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.

Layer - Display Settings Curve Definitions Leyer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo Data Type: Formations = V Name: Formation Expanded UVI Save Undo Display Layer Name of Curve Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo Display Layer Name of Curve Scales on Track Formation Color: block V Display Layer Name of Track Deph Offset Display Scale Flacements Display Scale Flacements Display Layer Name Stage Display Layer Name Stage Display Layer Name Display Scale Flacements Display Layer Name Display Layer Displ
Display Scale Change Line Indicator Every Stat at Display Scale con non-active layers
OK Cancel Help 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 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.

MDT

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	X
Save Undo New Del First Prev ? Run No.	
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	<i>u</i>
Geologist	
Manny Mendez	
	Exit

Adding a MDT Run

- 2. Click on MDT, under the Reports menu selection, to activate the MDT Runs window.
- 3. Click on the New button or press ALT-N.
- 4. Type in the Run Number Field press the Tab key to advance the cursor to the next field.
- 5. **Type** and **Tab** between all the fields and Fill in the appropriate information.
- 6. 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 **Shortcut Options** system window.

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

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**.

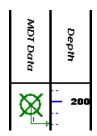
3. The user will be prompted with a confirmation "Do you really want to delete?" **Click** on the

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	do New De	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 1803.32	Temp 67.1	Mobility 720.41028
Formation Red Sky Fo	rmation			
Comment All OK, Pres	sures quite g	ood.		<
<				>
				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 **Save button or press ALT-S** and then **click** on the appropriate button when prompted with 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 **Seven** 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 **Delete button**.

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

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

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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 **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]	Active Layer Configuration [MDT Data]
Active Layer Configuration [MDT Data] Layer - Display Settings Curve Definitions Save Undo Name: MDT Data V UWI Display Layer Name of Curve Scales on Track Depth Offset Display Vertical Drientation (Layer Name) Display Scale Scale Scale Placements Display Scale Change Line Indicator Display Scale Scale Stat at	Active Layer Configuration [MDT Data] Layer - Display Settings Curve Definitions Layer - Display Settings Curve Definitions Save Undo Annotation Group Directional Survey Generic Category Graphics MDT Run No Visual Range (Energy) Generic Symbols
Display Full Logarithmic Scale Display Delta-Axis Grid Display Data-Axis Grid Display Data-Axis Grid Display Data-Axis Grid Display Data-Axis Grid	T OK Cancel Help

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 Report	
Save Undo New Del	First Prev ? Next Last Lithologies Gas
Date Sep 27, 2001	Morning Depths MD: 1410 @ 700 hrs
	TVD: 1409.87 SSL: -812.27
Hours Drilling: 21.7 Da	ily Cost AccumI.Cost
Formation: Dowson Ba Operational Status: Drilling	y
Operational Summary:	
Report From: Bob Sephto Report To: Homer McD Remarks:	n onald

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 **Sorrel 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.
- 4. Click on the <u>Save</u> 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 **Del**

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 **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 <u>Yes</u> **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:

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 Sample
Interval 900 to 1100	Descriptions To Long Desc
	~

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

Sample

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

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

Adding a Lithology Summary

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

- button to view a list of Lithology Summaries to date and then double click on the 1 Click on the record that you wish to edit.
- ? Next Last to navigate through the records. See the 2. Or, use the Database Navigational Tools 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.
- 4. 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

- Interval...
- 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** 1. Click on the Del

Delete button. on the

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

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 <u>Yes</u> 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 & slty, n calcs, sft, t 130m - 135m: Ss: It gy, It gn, vf - f gr, m srt, sbang - sbrdd, qtz, mnr fld, occ lit fra 135m - 140m: Sh: aa 135m - 140m: Sh: at g, It gy gn, qtzs, pyric, v arg, calcs, tt, nvhs. 135m - 140m: Sh: at g, It gy, bk red brn, mot, aren & slty ip, occly micmica, sft, s 140m - 145m: Sh: It gn, It gy, bk red brn, mot, aren & slty ip, occly micmica, sft, s 140m - 145m: Sh: It gn, It gy, pr, py srt, sbang - sbrdd, qtz, mnr fld, tr lit grs, abnt 140m - 145m: Sh: It gn, It gy, pr, py srt, sbang - sbrdd, qtz, mnr fld, tr lit grs, abnt 145m - 150m: Sh: It gn, It gy phn, f gr grdg - slt, w srt, sbrdd, qtz, tr carb fik: 150m - 155m: Sh: It gn, It gn, phr, sly calcs, nicmica, occly slty, aren, sft, bll 150m - 155m: Nh; wh, clt, cy xln, sft, dns, nvhs. 155m - 160m: No Sample: 160m - 165m: Sh: It gn, It, gn, pk, vf - f gr, m srt, sbang, qtz, com fld, occ lit frags. 165m - 170m: Sh: aa.
✓ 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
Alternate Range Selection
From 0K
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 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

POWER

0K

subsequent **descriptions** to highlight them. Then, **click** on the highlighted descriptions in the Lithology Summary Window.

button. This will place all the

OR the Alternate Range Selection Utility

- 1. Or **click** on the **From... 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.

Save Undo New Del First Prev ? Next Last Annotations
Save ondo new Del Fist Flev ? 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 srt, sbang - sbrdd, qtz, occ mica flks, tr fld, tr chlor, sl trs dolic cmt, predly disaggd, g est intgran por (16-20%), tr ptch brn o stng, bri yel flor, g insts stmg mky yel cut flor. 697 - 701m Dol: It brn, micsl, arg, slty & aren, dns, nvhs. 701 - 743m Ss: It gy, It bron, m - cgr, w srt, sbang - sbrdd, qtz, com micas flks, tr fld, tr chlor, sl trs dolic cmt, predly disaggd, g est intgran por (18-24%), ptch brn o stng, bri yel flor, g insts stmg mky yel cut flor. 743 - 745m Dol: It brn, micsl, sl yar, slty, dns, nvhs. 745 - 770m Ss: It gy, It gysh brn, f - c gr, modly w srt, sbang - sbrdd, qtz, com micas flks, mr fld, tr chlor, ts dolic & sils cmt, tr cly mtx, predly disaggd, g est intgran por (18-24%), com brn o stng, bri yel flor, g insts bri yel flor, g insts bri yel cut flor.

- 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.

Select Annotation Group

- 2. 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.
- 3. 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 Ss: It gy, f - c gr, modly w srt, sbang - sbrdd, qtz, com micas flks, tr fld 695 - 700m 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 - 715m Ss: It gy, It brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, com micas I 715 - 720m Ss: It gy, It brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, com micas I 715 - 720m Ss: It gy, It brn, m - vc gr, wsrt, sbang - sbrdd, qtz, com micas flks, tr fl 720 - 725m Ss: It gy, It gysh brn, m - vc gr, modly w srt, sbard, qtz, com micas flks, tr fl 720 - 725m Ss: It gy, It gysh brn, m - vc gr, modly w srt, sbard, qtz, com micas flks, tr fl 720 - 725m Ss: It gy, It gysh brn, m - vc gr, modly w srt, sbrdd, qtz, comly micas, n 730 - 735m Ss: It gy, It gysh brn, m - vc gr, wsrt, sbarg - sbrdd, qtz, comly micas, n 730 - 735m Ss: It gy, It gysh brn, m - vc gr, wsrt, sbarg - sbrdd, qtz, comly micas, n 730 - 735m Ss: It gy, It gysh brn, m - vc gr, wsrt, sbarg - sbrdd, qtz, comly micas, n 740 - 745m Ss: It gy, m - vc gr, modly w srt, sbarg - sbrdd, qtz, comly micas, m 740 - 745m Ss: It gy, m - vc gr, modly w srt, sbarg - sbrdd, qtz, comly micas, m 740 - 745m Ss: It gy, m - vc gr, modly w srt, sbarg - sbrdd, qtz, comly micas, m
745 - 750m Ss: It gy, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly micas, mr 750 - 755m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly mi 755 - 760m Ss: It gy, It gy brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, comly mi 760 - 765m Ss: It gy, It gysh brn, f - c gr, modly w srt, sbang - sbrdd, qtz, com mic-
765 - 770m Ss: It gy, It gysh brn, f - c gr, modly w srt, sbang - sbrdd, qtz, com mic- 770 - 775m Ss: It gy, It gysh brn, m - vc gr, modly w srt, sbang - sbrdd, qtz, com m
Left Click to select a single annotation Select All
Hold the CTRL Key down to select multiple annotations
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 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 can also **hold 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 bm, m - c gr, occly v c gr, modly w srt, sbang - sbrdd, qtz, occ mica flks, tr fld, tr chlor, sl trs dolic cmt, predly disaggd, g est intgran por (16-20%), tr ptch bm o stng, bri yel flor, g insts stmg mky yel cut flor. 697 - 701m Doi It bm, micxl, arg, slty & aren, dns, nvhs. 701 - 743m Ss: It gy, It bm, m - cgr, w srt, sbang - sbrdd, qtz, com micas flks, tr fld, tr chlor, sl trs dolic cmt, predly disaggd, g est intgran por (16-24%), ptch bm o stng, bri yel flor, g insts stmg mky yel cut flor. 743 - 745m Doi It bm, micxl, sly ag, slty, dns, nvhs. 745 - 770m Ss: It gy, It gysh bm, f - c gr, modly w srt, sbang - sbrdd, qtz, com micas flks, mr fld, tr chlor, ts dolic & sils cmt, tr cly mtx, predly disaggd, g est intgran por (18-24%), g est intgran por (18-24%), com bm o stng, bri yel flor, g insts bri yel cut flor.

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

Gas Summary

Gas 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

Note: 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

T. 10 01 00 00 01 01	
Total Gas C1 C2 C3 iC4 nC4	iC5 nC5
Min. 1%1: 3.45 2.34 1.23 0.678 0.234 0.23	0.324 0.342
Aax. (%): 6.78 4.24 3.45 0.99 0.567 0.438	0.547 0.549

Adding a Gas Summary

- Gas Click on Morning Report under the Reports menu selection. Then click on the 1. button to activate 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...

- button to view a list of Gas Summaries to date and then double click on the record Click on the 1 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.
- 4. 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

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

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

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

Del to delete and it will be displayed in the Gas Summary 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

Yes 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
All fields	3.3	Numeric	Optional
Remarks	40000	Character	Optional

Mud Type

This window allows you to detail the depths used for each drilling fluid type. There are two ways of accessing this report: in the Well window, as described in Steps 1 - 3 below, or under Reports on the Menu Bar.

Adding a Mud Type

Mud Turses

- 1. Click on Well, under the Edit menu selection, to open the Well window and it will default to the active well.
- 2. Click on the well Name... button to activate a list of well names and then double click on the well you wish to work on.

		muu rypes							
3.	Click on the	butt	n, in the We	I window, t	to activate th	ie Mud Ty	pe window	shown I	selow:

Mud Type	×
Save Undo New Del First Prev ? Next Last	
Interval from to 167	
Mud used: Milgel NT Slurry	

- 4. Click on the **New** button or press ALT-N and then fill in the report window with your data.
- 5. 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.

<u>Note</u>: The information entered into this window creates the **Mud Type** report generated within the **Print Well End Report** window

Editing a Mud Type

- 1. Click on the **Interval...** button to view a list of **Mud Types** 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 **Mud Type** window, make any changes you feel are necessary.
- 4. Click on the **Shortcut Options** system window.

Delete button.

Deleting a Mud Type

1. Click on the Interval... button to view a list of Mud Types to date and then double click on the record that you

wish to delete. Once the selected record is displayed in the Mud Type 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 Del

to delete and it will be displayed in the Mud Type window. Then Click on the

<u>Y</u>es 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.

Field Restriction Table:

Top Depth	5.5	Numeric	Optional
Base Depth	5.5	Numeric	Optional
Mud Type Used	50	Character	Optional

Sidewall Cores

Sidewall Core information is entered into the window shown below. This information fills in the header of the Sidewall Core. The indications for the sidewall cores are handled through the Sidewall Cores window.

The actual **Sidewall Core Descriptions** are entered through the **Cores... button**, located in the upper right corner of the Sidewall Core Runs Window. These **Sidewall Core Descriptions** will then be used in the **Well End Report** print window's "**Sidewall Core Report**".

<u>Note</u>: The **Sidewall Core Report** will <u>not</u> print out, until you have completed at least **one** (1) **Core Description** that falls <u>between</u> the **Core's Interval** (Top of Run) and **Interval** (Base of Run) depth values.

Sidewall Core Runs	;				
Save Undo New	Del First Prev	? Next Last	Cores	🗌 🔽 Display co	res in this run
Run No. To	pofRun Base	of Run Core	es Requested	Cores Obtained	Cores Lost
1 0	1200	25		20	5
Service Company		Tool Type			
A Better Sidewall Core	e Company	Rotary Dr	ill Type		
Date		Geologist			
Jun 9, 2003		R.W. (Bol	b) Sephton P.	Geol.	
					Exit

Adding a Sidewall Core Run

- 1. Click on Sidewall Core, under the Reports menu selection, to activate the Sidewall Core Runs window.
- 2. Click on the **New** button or press ALT-N.
- 3. Type in a Run number and then press the Tab key to advance the cursor to the Top of Run field.
- 4. Type in the Top of Run depth and then press the Tab key to advance the cursor to the Base of Run field.
- 5. Type in the Base of Run depth and tab through the other fields filling in the necessary information.
- 6. 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 Sidewall Core Run

Run No.

- 1. Click on the drop box to view a list of Sidewall Cores 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.
- 4. 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 Sidewall Core Run

lun	No.	
1		

Click on the drop box to view a list of Sidewall Cores Runs to date and then click on the record that you wish to delete. Once the selected record is displayed in the Sidewall Core Runs window, click on the Del Delete button.

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Del

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 Sidewall Core Runs window. Then Click on the

Delete button.

button.

Yes

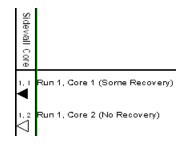
3. The user will be prompted with a confirmation "Do you really want to delete?" Click on the

Field Restriction Table:

Run Number	4	Numeric	Mandatory
Top of Run	10.5	Numeric	Mandatory
Base of Run	10.5	Numeric	Mandatory
Cores Requested	4	Numeric	Optional
Cores Obtained	4	Numeric	Optional
Cores Lost	4	Numeric	Optional
Service Company	60	Character	Optional
Tool Type.	30	Character	Optional
Date	DATE FORMAT		Optional
Geologist	60	Character	Optional

Sidewall Core Descriptions

This report allows you to describe a Sidewall Core. The long descriptions will be used in the Sidewall Core Description Report that is printed out in the Well End Report print window. The descriptions can also be transferred to the Striplog and the core locations can be viewed on the Sidewall Core layer.



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

Core No.

The **drop box** displays a list of descriptions that have been entered to date for the Sidewall coring run for the active well.

The **To Long Desc** button expands the text you can type in the Short Description field and places them in the Long Description field

The **To ShortDesc** button abbreviates the text you can type in the **Long Description** field and places them in the **Short Description** field. The Long descriptions are automatically updated from the short Description field when the short description is typed in.

Automatic Description Transfer Options

Transfer Options				
Automatic Description transfer				
Transfer to Annotation Group:	lithtext1	-		
🔽 Transfer Depth	🔲 Transfer %	✓ Transfer Short Form		

The **Automatic Description transfer** check box is 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.

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** check box I when activated will transfer the core depth to the log.

The **Transfer %** check box I when activated will transfer the core recovery % to the log.

The **Transfer Short Form** check box *w* 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.

SideWall Cores [Run #1]
Save Undo New Del First Prev ? Next Last 🔽 Display this core
Core No. Depth (MD) Depth (TVD) % Recovered 1 900 900 50 Lost core
Short Description To Long Desc
Rock Type [Ss / Mnr Sh lam It gy brn, vf gred, w srt, sbrdd, qtz, mnr cht, tr glau, sils cmt, g est vis por (16-18%), abnt dk brn o stng, bri yel flor, g stmg mky yel flor.
Long Description To ShortDesc
Rock Type Sandstone with Minor Shale laminae
Sph gray bown, very fine grained, well sorted, subnounded, quatz, minor chert, trace glauconie, siliceous cement, good estimated visible porosity (16-18%), abundant dark brown oil staining, bright yellow fluorescence, good streaming milky yellow fluorescence.
Transfer Options
Automatic Description transfer
Transfer to Annotation Group: lithtext1
I Transfer Depth ☐ Transfer % I Transfer Short Form
Exit

Adding a Sidewall Core Description

- 1. Click on Sidewall Cores, under the Reports menu selection, to activate the Sidewall Core Runs window.
- 2. The user must fill in the Mandatory fields in the **Sidewall Core Runs** window and save this record before you can

click on button in the Sidewall Core Runs window.

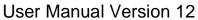
3. If any descriptions have been entered for the current well, the last description will be displayed. If there is a

description then the user must first **click** on the **button** to clear the form and make it ready to accept a new record. Otherwise, the cursor will be in the **Core No** field.

- 4. Type in the Core No. and press the Tab key to advance to the Core depth (MD) field.
- 5. Type in the Core Depth (MD) and press the Tab key to advance to the TVD depth field.
- 6. If the survey data has been entered this field will be filled in for you. If not you may **type** in the Core Depth TVD or leave the field blank and **press** the **Tab key** to advance to the % recovery field.
- 7. Type in the % Recovered and press the Tab key to advance to the Rock type short description.
- 8. Type in the Rock Type short name and press the Tab key to advance to the Short description field.
- 9. Type the Short (abbreviated) Description into the Short Description field.

Note: 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



cap woi	bital letters to begin your abbrevi rds that are capitalized in the lon	ations and le	eave the remaining letters in	lower case. This will produce lower case	
10.	Click on the Save button or j Shortcut Options system wind	press ALT-S dow.	and then click on the app	ropriate button when prompted with the	
Not	te: You also have the option of t	vping out the	e non-abbreviated form of th	e Sidewall Core Descriptions into the	
Lor	ng Description field and then cl lewall Core Descriptions in the	icking on the	To ShortDesc button to d	isplay the abbreviated form of the	
11.	To add a new description, clic	k on the New	button or press ALT-N	and repeat Steps 4 to 10.	
	te: IT IS IMPORTANT TO SAVE e you finish entering a new reco		CORD!! You must click on	the Save button or press ALT-S every	
Ec	diting a Core Descri	iption			
1.	Click on the drop of the drop	p box to view	w a list of Sidewall Core De	escriptions to date and then click on the	
2. 3.	Database Navigational Tools section later in this User Manual for more information.				
4.	Click on the Shortcut Options system window.				
De	eleting a Core Desc	ription			
1.	record that you wish to delete.			escriptions to date and then click on the the Sidewall Core Runs window, click	
	on the Delete button.				
2.	Or, use the Database Navigation Database Navigation Database Navigational Tools	onal Tools	First Prev ? Next Last to to the test of t	o navigate through the records. See the pre information. Select the record you wis	
	to delete and it will be displayed	d in the Side	wall Cores window. Then	Click on the Del Delete button.	
3.	The user will be prompted with	a confirmati	on "Do you really want to d	elete?" Click on the <u>Yes</u> butto	
Fie	Id Restriction Table:				
	Core No.	4	Numorio	Mondotony	
	Depth (MD)	4 10.5	Numeric Numeric	Mandatory Mandatory	
	r- ··· (··· -)				

POWER

Core No.	4	Numeric	Mandatory
Depth (MD)	10.5	Numeric	Mandatory
Depth (TVD)	10.5	Numeric	Optional
% Recovered	5.2	Numeric	Optional
Rock Type (SD)	50	Character	Optional
Short Description	40000	Character	Optional
Rock Type (LD)	50	Character	Optional
Long Description	40000	Character	Optional

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 **Sidewall Core** 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 [Sidewall Core	1 🛛
	J Image: Second Sec
Display Data-Axis Grid	OK Cancel Help

Test

This window is used to capture Well Test data. This data can be printed out, using the Print Well End Report window.

Note: The Test Interval is used to show the interval in the Test layer on the log, however, if the Misrun check box is activated the interval will <u>not</u> be shown on the log.

Well Test	×
Save Undo New Del First Prev ? Next Last Test Date Test Type Test Periods Run # 1 Test #: 1 Image: Market with the straddle Image: Market with the straddle	
MD: 1995 to 1022 1456 Top Formation: Clorado TVD: 994.1 to 1020.4 1303.4 Base Formation: Bluesky Testing Company: ABC Testers Representative: Fred Whynot Truck #: 1435 Closed Chamber Subsea Testers Representative: Lou Granger String Equipments (String Type; Length; ID; Volume) Gas / Liquid Cushions (Type; Gas Pres (kPa); Length (m); Vol (m²))	
Drill Pipe; 800 m; 10.34 mm; 4.5 m3 Drill Collars; 195 m; 5.23 mm; 1.34 m3	
Hole Good, No problems	~
Dilling Fluid Properties: Gel-Chemicals, 1200 kg/m3 [Density], 45 sec/l [Viscosity], 12.5 [ph], 8 cc/30min [Fluid Loss] Fluid 10 m Drilling Fluid, 100 m Water [Cushion], 600m Oil [42 degrees API]	~ ~
Recovery: To the Primity Fund, 100 m where Leasthold, booth on P2 degrees All 1 Fluid / Gas 4 Fluid Samples and Gas Bomb sent to Eveready Fluid Testers in Grande Prairie.	~ ~
Analysis: Remarks: Test was mechanically successful.	> <
	~

Adding a Test

- 1. Click on Test 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. Click on the **Shortcut Options** system window.

Note: A Test Record will only be partially printed if no test periods are filled in. Click on the button to enter at least 1 (one) test period for every test unless it is a misrun.

Editing a Test

- 1. Click on the Bun #... button to view a list of Tests 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 **Well Test** window, make any changes you feel are necessary.
- 4. Click on the **Shortcut Options** system window.

Deleting a Test

1. Click on the Bun #... button to view a list of Tests to date and then double click on the record that you wish to

delete. Once the selected record is displayed in the **Well Test** 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 Well Test 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> **button**. You can **Tab** between fields or press **Shift + Tab** to move backwards between fields.

Field Restriction Table:

Well Test Window

Run Number	4.0	Numeric	Mandatory
Test Number	4 Character M		Mandatory
Test Date	DATE FORMAT		Optional
Test Type	30	Character	Mandatory
Top MD	5.2	Numeric	Mandatory
Base MD	5.2	Numeric	Optional
Total MD	5.2	Numeric	Optional
Top TVD	5.2	Numeric	Optional
Base TVD	5.2	Numeric	Optional
Total TVD	5.2	Numeric	Optional
Top Formation	30	Character	Optional
Base Formation	30	Character	Optional
Testing Company	30	Character	Optional
Testing Rep.	30	Character	Optional
Truck Number	10	Character	Optional
Closed Chamber Co.	30	Character	Optional

Del

Delete button.

Closed Chamber Rep.	30	Character	Optional
String Equipment	40000	Character	Optional
Gas/Liquid Cushions	100	Character	Optional
Tool Chased Dist.	3.1	Numeric	Optional
Mud Level Drop	3.2	Numeric	Optional
Bottom Hole Temp	3.2	Numeric	Optional
Hole Conditions	40000	Character	Optional
Drilling Fluid Prop.	40000	Character	Optional
Fluid Recovery	40000	Character	Optional
Fluid/Gas Analysis	40000	Character	Optional
Remarks	40000	Character	Optional

Test Periods The following window appears when you click on th

JU CIICK ON THE		Dullon.
Test Periods [1:1:In	nflate Straddle]	
Save Undo New De	el First Prev ? I	Vext Last
Period Type	Pressure (kPa	a) Duration (min)
Flow 1	Start: 450 End: 900	10
Flow Description		
GAB increasing to SAB GTS in 9 min.	t in 5 min.	<
Surface Choke Type	Inside Diameter (mm)	Rate Units
Willis	12.7	m3/day 💌
Flow Rates: (Time from 2; 100.61; 296.4 4; 104.28; 213.4 6; 108.08; 232.2 8; 113.04; 325.6 10; 117.68; 384.1	Start (min); Pressure (kł	°a); Rate)

A typical period is a sequential series of letters or numbers (1, 2, 3... or a, b, c...).

Adding a Test Period

- Test Periods Click on Test under the Reports menu selection. Then click on the 1 button to activate the Test Periods window shown above.
- 2. Click on the **button or press ALT-N** and then fill in the report window with your data.
- 3. 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 Test Period

- Period #... button to view a list of Test Periods to date and then double click on the record that Click on the 1. you wish to edit.
- ? Next Last to navigate through the records. See the First Prev Or, use the Database Navigational Tools 2. **Database Navigational Tools** section later in this **User Manual** for more information. Once the selected interval is displayed in the **Test Periods** window, make any changes you feel are necessary.
- 3.
- Click on the **Save** button or press ALT-S and then click on the appropriate button when prompted with the 4. Shortcut Options system window.

Deleting a Test Period

1. Click on the **Period #...** button to view a list of **Test Periods** to date and then double click on the record that

you wish to delete. Once the selected record is displayed in the **Test Periods** window, **click** on the **Delete button**.

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 **Test Periods** 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 **Yes 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: Test Period:

Period Number	4.0	Numeric	Mandatory
Period Type	30	Character	Optional
Start Pressure	6.2	Numeric	Optional
End Pressure	6.2	Numeric	Optional
Duration	4.0	Numeric	Optional
Flow Description	40000	Character	Optional
Surface Choke Type	10	Character	Optional
Inside Diameter	5.2	Numeric	Optional
Rate Units	10	Character	Optional
Flow Rates	40000	Character	Optional

Note: When you add any layer to a log, it is always associated with a **Data Type**. The default settings for a **Test** layer are shown below. To access this window, **click** on the **Layer Configuration button** on the **Toolbar**, when the **Test** layer is active.

	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Test ✓ 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 Scale Change Line Indicator □ Display scales on non-active layers □ Display Full Logarithmic Scale □ Display Depth-Axis Grid □ Display Data-Axis Grid	Data Type: DST

Well Abstract

This window is used to allow the user to enter Well Abstract data. This data can be printed out, using the Print Well End Report window.

Well Abs	tract			
				~
			ОК	Cancel

- 1. Click on Well Abstract under the Reports menu selection to activate the Well Abstract window shown above.
- 2. Add, edit or delete comments regarding the particular well and **click** on the **DK button.** This will activate the **Confirmation** window.

Confirmation 🛛 🔀
Would you like to save the current record?
Yes No Cancel

3. Click on the <u>Yes</u> button to save the current record.

Wireline Logging

Wireline Logging descriptions are entered into this window and then this information, accompanied by the Trips data, can be printed out in your Print Well End Report window.

Wireline Logging		×
Job #	el First Prev ? Next Last Trips Logging Date: Jan 30, 1997 Logging Company: Any Old Downhole Tool Company uld be You Witness: Buddy Whynot	-
District: Lloydminster	Unit #: 1243 Bit Size: 200 mm Casing Size: 219.1 mm	nm
Lost Time: 2	hrs Logger Down Time: 2 hrs Job Time: 12 hrs	
Driller Total Depth:	1200 TVD: 1200 Max. Deviation: •	
Driller Casing Depth:	356 TVD: 356 Mechanical Assistance	
Logger Casing Depth:	355.8 TVD: 355.8 Pressure Control Equipment Used	
Strap Depth:	1202.5	
Remarks:		
		v

Adding a Wireline Logging Run

1. Click on Wireline Logging under the Reports menu selection.

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

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

Job #... button to view a list of Wireline Logs to date and then double click on the record that 1. Click on the

Del you wish to delete. Once the selected record is displayed in the Wireline Logging window, click on the Delete button.

2. Or, use the Database Navigational Tools 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 to delete and it will be displayed in the Wireline Logging window. Then, click on the Delete button.

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

Adding a Wireline Trip

Trips 1. Click on Wireline Logging under the Reports menu selection. Then click on the button to activate the Wireline Trips window.

Wireline Trips [Job #1]	×
Save Undo New Del First Prev ? Next Last Run # 1 Trip Date: Jan 30, 1997 On Bottom Date: Jan 30, 1997 Drilling Fluid: Gel-Chemical Density: 11165 Viscosity: 67 pH: 9.5 Fluid Loss: 12 Rm Measured Temp. RmF Measured Temp. RmC Measured Temp. Rm Bottom HoleTemp. 1.3 @20 1.1 @20 0.96 @22 0.59 @56 RmF Source: Flowline RmC Source: Flowline Max. TvD: 1200 Max. Temp: 56	
Logging Tools: [Tool Type; Intervals; Remarks] [CNL-LDT-GR-SP-Cal (YY); Total Depth - Sfee Csg [1200-356m]; No problems whatsoever.	
	~
Hole Lole had a couple of tight spots on the trip out. Reamed one at 985m. Tools did encounter some tight spots, but were able to get through with minimum difficulty.	
Remarks: Some of the pads were damaged from the tight hole encountered. Damage was minimal.	

- Click on the button or press ALT-N and then fill in the report window with your data.
- Click on the button or press ALT-S and then click on the appropriate button when prompted with the 5. Shortcut Options system window.

Editing a Wireline Trip

- 1. Click on the Bun #... button to view a list of Wireline Log Trips 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 **Wireline Trips** window, make any changes you feel are necessary.
- 4. Click on the **Shortcut Options** system window.

Deleting a Wireline Trip

1. Click on the **button** to view a list of **Wireline Log Trips** to date and then **double click** on the record **Del**

that you wish to delete. Once the selected record is displayed in the **Wireline Trips** 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 **Wireline Trips** window. Then, **click** on the **Delete button**. The user will be prompted with a confirmation "Do you really want to delete?"

3. Click on the <u>Yes</u> button.

Field Restriction Table:

Wireline Logging

Job Number	20	Character	Optional
Logging Date	DATE	Default=Current	Optional
	FORMAT	Date	
Logging Company	30	Character	Optional
Logging Engineer	30	Character	Optional
Witness	30	Character	Optional
District	30	Character	Optional
Unit Number	10	Character	Optional
Bit Size	3.2	Numeric	Optional
Casing Size	4.2	Numeric	Optional
Lost Time	4.2	Numeric	Optional
Logger Down Time	4.2	Numeric	Optional
Job Time	4.2	Numeric	Optional
Max Deviation	3.1	Numeric	Optional
Driller Total Depth	5.2	Numeric	Optional
Driller Total TVD	5.2	Numeric	Optional
Driller Casing Depth	5.2	Numeric	Optional
Driller Casing TVD	5.2	Numeric	Optional
Logger Casing Depth	5.2	Numeric	Optional
Logger Casing TVD	5.2	Numeric	Optional
Steel Line Depth	5.2	Numeric	Optional

Wireline Trips

Run Number	3.0	Numeric	Mandatory
Trip Date	DATE		Optional
	FORMAT		
On Bottom Date	DATE		Optional
	FORMAT		
Drilling Fluid	40000	Character	Optional
Density	4.1	Numeric	Optional
Viscosity	3.0	Numeric	Optional
pH	2.1	Numeric	Optional
Fluid Loss	3.1	Numeric	Optional
Rm	4.4	Numeric	Optional
Rm Temperature	3.2	Numeric	Optional
RmF	4.4	Numeric	Optional
RmF Temperature	3.2	Numeric	Optional
RmC	4.4	Numeric	Optional
RmC Temperature	3.2	Numeric	Optional
Rm BH	4.4	Numeric	Optional
Rm BH Temp	3.2	Numeric	Optional
RmF Source	20	Character	Optional
RmC Source	20	Character	Optional
Max. Depth	5.2	Numeric	Optional
Max. TVD	5.2	Numeric	Optional
Max. Temp	3.2	Numeric	Optional
Logging Tools	40000	Character	Optional
Hole Conditions	40000	Character	Optional
Remarks	40000	Character	Optional

Work Schedule

This window allows you to identify the Dates and Depths of the striplog that each author has created. There are two ways of accessing this report: in the Well window or under Reports on the Menu Bar.

Adding a Work Schedule

1. Click on Work Schedule, under the Reports menu selection, to activate the Work Schedule window shown below.

Work Sche	dule	×
<u>S</u> ave Undo	New Del First Prev ? Next Last	
Interval	from to <mark>800 1392 _{Type:} geology -</mark>	
Start Date:	Sep 6, 1998 End Date: Sep 8, 1998	
Contractor:	TriVision	
Work perform	med by: R.W. Sephton	
Remarks		
		<

1.

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

Editing a Work Schedule

- 1. Click on the **Interval...** button to view a list of Work Schedules 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 **Work Schedule** window, make any changes you feel are necessary.
- 4. Click on the **Shortcut Options** system window.

Deleting a Work Schedule

1. Click on the Interval... button to view a list of Work Schedules to date and then double click on the record

that you wish to delete. Once the selected record is displayed in the **Work Schedule** 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 **Work Schedule** 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 **Yes button**. **Note:** Be sure to return to the **Work Schedule** window to enter the final date of the well, once it is finished. Also, the information entered into this window creates the **Work Schedule** report in the **Print Well End Report** window.

Field Restriction Table:

Туре	10	Character	Mandatory
Top Depth	5.5	Numeric	Mandatory
Base Depth	5.5	Numeric	Optional
Start Date	DATE FORMAT	Default=Current Date	Optional
End Date	DATE FORMAT		Optional
Contractor	30	Character	Optional
Worker	50	Character	Optional
Remark	254	Character	Optional

Chapter Five - Options Menu

Refresh Window

Refresh Data Geology Dictionary... Curve Maintenance. Log Configuration Builder. Sample / Core Description Transfer... Master Survey Group... Shift Data.. Lithology Integrity Check... Use Default Printer Settings Sidetrack Unwrap LAS System Options...

When you click on Refresh Window, under the Options menu selection, Power*Log / Core & Curve will redraw the layers displayed on the screen. This is utilized to redraw the log when the screen doesn't look normal. This option will not retrieve information from the database and populate the log with it.

Note for Network users: Since this function doesn't retrieve information from the database, you will not be able to see any changes made by other network users.

Refresh Data



This option updates the log/well with all of the new/updated data that has been edited, entered or imported into the database. It can also be used if you have made some changes and you don't believe that they are being reflected on the log.

Refresh Data is particularly helpful, when you are working on numerous logs with the same Primary Well and the current log has been updated, while the inactive log(s) have not. To update the inactive log(s) with the latest information, make one of the previously inactive logs active, click on the Refresh Data option, and then repeat this procedure for the rest of the logs.

Note: If you are using a network version of Power*Log / Core & Curve, the Refresh Data option will update the database with changes, that have been made to the same Primary Well by another workstation.

Geology Dictionary

There are over 1500 terms listed in the Geology Dictionary. Definitions are organized alphabetically in their long form. You may add your own terms to the dictionary or modify existing terms.

Click on Geology Dictionary, under the Options menu selection, to activate the Geology Dictionary window shown below. You can also get access to the Geology Dictionary through the Sample and Core Description windows under the Reports pull down menu.

Options
Refresh Window
Refresh Data
Geology Dictionary
Curve Maintenance
Log Configuration Builder
Sample / Core Description Transfer
Master Survey Group
Shift Data
Lithology Integrity Check
Use Default Printer Settings
Sidetrack
Unwrap LAS
System Options

Geology Dictionary	×
Save Undo New Del First Prev ? Next Last	
Short Form	
Long Form: Ito	
Category:	
Underline: 🗖	

Adding an Abbreviation

- 1. Click on Geology Dictionary under the Options menu selection.
- 2. Click on the button or press ALT-N to clear the Short Form and Long Form fields.
- 3. Enter the desired abbreviation into the Short Form field and press the Tab key to advance to the Long Form field.

- 4. Enter the long form of the new abbreviation into the Long Form field.
- 5. Click on the **Shortcut Options** system window.

Editing an Abbreviation

- 1. Click on the **Short Form...** button and a list of abbreviations will appear.
- 2. Then, **click** on the empty field at the top of **Geology Dictionary Terms** window and begin typing out the full word.
- 3. Click on the **Query** button and the list of Geology Dictionary terms will advance alphabetically. You may also scroll down the list to find the word, if you so desire.
- 4. Either **double click** on the word you were searching for in the list or **click** once on the word and then click on

Select button. The word and its abbreviation will then appear in the Geology Dictionary window.

5. Make any necessary changes to the abbreviation, **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 an Abbreviation

the

- 1. Click on the **Short Form...** button and a list of abbreviations will appear.
- 2. Then, **click** on the empty field at the top of the **Geology Dictionary Terms** window and begin typing out the full word.
- 3. Click on the **Query** button and the list of Geological terms will advance alphabetically. You may also scroll down the list to find the word, if you so desire.
- 4. Either **double click** on the word you were searching for or **click** on the word and then **click** on the **Select button**. The word and its abbreviation will then appear in the **Geology Dictionary** window.
- 5. Click on the Delete button and you will receive the following system message, "Do you really want to delete the current record?"
- 6. Click on the **Yes** button to delete the abbreviation and select the appropriate shortcut option.

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.

Curve Maintenance

The Curve Maintenance window is designed to provide the user with access to every curve layer configuration tool within Power*Log / Core & Curve. Click on Curve Maintenance, under the Options menu selection, or simply click

on the Curve Maintenance button to activate the Curve Maintenance window shown below:

ptions	Curve Maintenance			
Refresh Window	Track Config	Layer Config	Curve	
Refresh Data	Drilling Progress Drilling Progress	Drill Rate Total Gas	Drill Rate Total Gas	
Geology Dictionary				
Curve Maintenance				
Log Configuration Builder				
Sample / Core Description Transfer				
Master Survey Group				
Shift Data	Selected Layer	Curves		
Lithology Integrity Check	Drill Rate	Drill Rate [min/m] Total Gas [%]		Update Mapp
Use Default Printer Settings	Curve Scales			
Sidetrack	(Interval : Scale)			Log Config Bu
Unwrap LAS	0 - 0 : 1 - 1000			
System Options				Exit

Mapping a Curve to an Existing Layer

- Click on Curve Maintenance under the Options menu selection.
 Select (highlight) a layer you wish to associate the sume selection.
- 2. Select (highlight) a layer you wish to associate the curve data with and the layer's name will be displayed in the **Selected Layer** field.
- 3. Scroll through the list of curves to find the curve data you wish to map to the previously selected layer, select (highlight) the desired curve, and its scale will be displayed in the **Curve Scales** field.
- 4. **Click** on the Update Mapping **button**. The selected curve and its data will be associated with the selected layer and displayed accordingly on the log.
- 5. **Click** on the **Exit button** to save and make changes to the curve displays. If this is an imported curve, the scales associated with this curve could be wrong. Refer to Changing and Adding Curve Scales section.

Changing and Adding Curve Scales

- 1. Click on the Curve name that you wish to edit.
- 2. Click on the
 - button to activate the Curve Scale window shown below:

Curve Scale				
<u>Save</u> Undo <u>N</u> e	w Del	First Prev	? Next Last	
	from	to	Left / Bottom	Right / Top
Depth Interval	0	0	Scale: 1	1000
Backup Scale:	straight s	hift 💌		

Notice that the **Interval** (From) and **Interval** (To) values, respectively, have defaulted to "0" to "0" with the **Scale** (Left), **Scale** (Right), and **Backup Scale** defaulting to the values last entered by the user.

**Note that an interval of 0 to 0 represents the entire curve. **

- 3. Enter a new value into the Interval (To) field to indicate where the existing scale will stop.
- 4. Click on the **Shortcut Options** system window.
- 5. Type a new value into the **Interval** (From) field (must be the <u>same</u> value that was entered into the <u>original</u> **Interval** (To) field to indicate where the first curve scale ended.)
- 6. Type a new value into the **Interval** (To) field, which is typically larger than the last depth on your log, to indicate where the second curve scale ends.

- Enter the new Scale (Left) and Scale (Right) values, including a Backup Scale (typically Straight Shift), from 7. the Backup Scale field drop box
- Click on the button or press ALT-S and then click on the appropriate button when prompted with the 8 Shortcut Options system window to close the Curve Maintenance window.

Note: Always fill in all the fields in the Curve Scale window. Never leave any depth intervals uncovered by the curve scales intervals. The data at those intervals will not be able to be shown.

Editing the Active Track Configuration

- Click on the Track name that you wish to edit. 1.
- Click on the Track Config button to activate the Track Configuration window. 2.
- Edit the Track Configuration window, as outlined below. 3.

Adding a Header to a Track

Type the desired Header information into the Heading fields within the window and click on the a.

<u>S</u>ave button or press ALT-S.

Offsetting a Track - (Correlational Module only)

b. Type the offset figure into the **Depth Offset** field within the window and **click** on the Save button or press ALT-S and then click on the appropriate button when prompted with the Shortcut Options system window. to exit the window and return to the Track Configuration window.

Note: A positive integer will increase the depth of the track(move it down), while a negative integer will decrease the depth of the track(move it up).

4. Click on the **Save** button or press ALT-S to save your work and exit from the Curve Maintenance window.

Editing a Layer Configuration

1. Click on the Layer name that you wish to edit.

- Layer Config button to activate the Layer Configuration window. Click on the 2.
- Edit the Layer Configuration window, using the instructions outlined for you in the On-Line Help System 3. (generated by pressing the F1 key, when you are inside the Layer Configuration window).
- Click on the **Save** button or press ALT-S and then click on the appropriate button when prompted with the 4. Shortcut Options system window.

Changing Curve Units, Names, Null Values, or Remarks

Curves Click on the button to activate the Digital Curve window shown below:

Digital Curve	
Save Undo New Del First Prev ? Next Last	Scale
Name	
Units: min/ft 🗨	
Depth Units: ft	
Null Value: -1	
Remark:	

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- 2. Use the **Database Navigational Tools** to view all of the curves available in the database and select the one that you wish to use OR
- 3. Click on the **Name...** button to see a list of the curves associated with the primary well or other wells in the database, if you used the **UWI** field in the **Layer Configuration** window to associate the layer with curve data in another well within the database.
- 4. You can now rename, select (or type in), new units, change the null value, or add/change the remarks.
- 5. Click on the **Source** button or press ALT-S and then click on the appropriate button when prompted with the Shortcut Options system window.

Note: You can add a new curve by clicking on the button or press ALT-N and filling in the blank fields. Click on the spropriate button or press ALT-S and then click on the appropriate button when prompted with the Shortcut

Options system window.

Adding a Curve Layer to a Track on your Log

When you add a curve layer to your log, you must assign it to a specific track.

- 1. Click on the Log Config Builder button in the Curve Maintenance window.
- 2. On the **left side** of the window, **click** on the **track** (Generic Curve / Single Curve or Mud Gas) containing the curve layer you wish to add to your log and the layers contained in the selected track will then be displayed below in the **Layers** section.
- 3. The left side of the window, click on the specific curve layer, that you wish to add to your log, within the Layers section on the left side of the Log Configuration Builder window.
- 4. On the right side of the window, highlight the track that you wish to add the selected curve layer to.

Add >>>

- 5. Click on the **button** to add the selected curve layer to the track on your log and the following system message will be activated, "*Do you want to ADD the selected <LAYER> from the available log to the active log?*"
- 6. Click on the <u>Yes</u> button. This will activate the **Get Name** window.
- 7. You now have the option of either renaming the curve layer or simply leaving it with its original name.
- 8. Click on the **button** to add the curve layer to your log and place its name in the active **Layers** list on the right side of the **Log Configuration Builder** window.
- 9. Click on the **Exit** button to close the Log Configuration Builder window and return to the Curve Maintenance window.
- 10. Click on the **Exit** button to close the Curve Maintenance window.

Log Configuration Builder

This window allows you to add tracks/layers, delete tracks/layers, alter track width, and move tracks. You can also access all log, track and layer configurations for your log.

To activate this window Click on Log Configuration Builder, under the Options menu selection in this window, or

ptions	Log Configuration Builder		
Refresh Window Refresh Data	Available Logs	Log Config.	Active Log Log: horizontalTest
Geology Dictionary Curve Maintenance	Generic Curve Grain Size Graphics Interpreted Lithology Lithology (%)	Add All >>> Show All	Tracks Track Conf Y 0.20 Core Y 3.50 Detailed Lithology Y 3.50 Detailed Lithology Y 0.15 Side - Rotate Y 0.20 Sounding Y 0.20 Rounding
Log Configuration Builder Sample / Core Description Transfer Master Survey Group Shift Data	Lithology Description Mud Gas Di Show Di Show Di Staining Percent Porosity Grade Porosity Type Brack Accessories	Add >>> Delete Show/Hide	Y 0.20 Sorting Y 0.50 Grain Size Y 0.20 Interpreted Lithology Y 0.50 Porosity Grade Y 0.15 Porosity Type Y 0.15 Dil Show Y 2.00 Drilling Progress
Lithology Integrity Check Use Default Printer Settings	C Layers	Move	Track Width: 2 Log Width: 9.05 • Layers Layer Conf Core Rate (100153206323W500) Gamma Ray (100153206323W500)
idetrack Inwrap LAS	Curve Deep Induction Density Porosity Drill Rate Gamma Ray		Drill Rate (100153206323W500) Engineering Parameters (100153206323W500) Mud Parameters (100153206323W500) Gas Annotations (100153206323W500) Bit Record (100153206323W500)
tem Options	Hole Size Medium Induction	Exit	

This is the heart of the **Power*Log / Core & Curve** program and as such controls the way your well's information is displayed on the log.

The well may have a lot of information stored in the database, but that information cannot be shown graphically on the log, until the necessary layers are built to illustrate that information.

The left side of the Log Configuration Builder: Available Logs

The Available Logs section or <u>left</u> side of the Log Configuration Builder window allows you to take any track or layer from Available Logs and add it to the log you are currently creating/building. On the left side of the window, below the **Cracks** radio button is a list of the tracks available for adding to the Active Log.

The **Available Logs** section or left side of the window contains the track and layer configuration of the **SYSTEM** [SYSTEM] log, when the window first opens. You have the option of using any of the existing <u>Tracks</u> and their associated layers or any of the existing <u>Layers</u> that are associated with any of the logs in the log database. The user

can **click** on the **Log...** SYSTEM **I** button on the left side of the screen to activate a selection list of all log formats that are in your database. The list is comprised of two (2) names with the first name in the list being the system **Log Name** and the second name (in brackets), being the **UWI** of its primary well. **Double click** on the log format you wish to copy from.

Below the **Layers** radio button, on the left side of the window, is a list of the layers available in the track highlighted above. They will be added all at once, if you add their parent track. However, they can also be added on an individual basis, if you only want to add one (1) layer to an existing **Active Log** track.

The right side of the Log Configuration Builder window: Active Log

The Active Log section or the <u>right</u> side of the window displays the tracks and layers of the <u>Active Log</u> (the log that is open), in the main Power*Log/Core/Curve window that is open. The name of the log is viewed in the Log field. In this case, it will be "Horizontal Test." Below the <u>• Tracks</u> radio button on the right side of the window, is a list of the tracks that are currently found within the Active Log. The track at the top of this list is drawn on the left side of the log, while the track on the bottom of the list is drawn on the far right of the log with all of the other tracks drawn in between, respectively. Below the <u>• Layers</u> radio button, on the right side of the window, is a list of the layers that are associated with the track highlighted above.

The middle of the Log Configuration Builder window: Selection Buttons

The **selection** buttons, found in the middle column of the window, are for adding layers or tracks from the **Available Logs** to the **Active Log**, activating/deactivating the **Active Log's** tracks, deleting active log tracks or layers, and moving tracks or layers within the **Active Log**.

Options	Log Configuration Builder
Refresh Window Refresh Data	Available Logs Log SYSTEM Log Config C Tracks Tracks Track Config
Geology Dictionary Curve Maintenance Log Configuration Builder	Ages Add All >>> Bedding Contacts Add All >>> Bioturbation Show All Casing Show All Cabonate Texture Hide All Core Box Data Y 0.20 Oilsands Formation Core Donate Texture Hide All Core Donate Texture N 0.25 Facies Core Density N 0.25 Core Samples
Sample / Core Description Transfer Master Survey Group Shift Data Lithology Integrity Check Use Default Printer Settings Sidetrack Unwrap LAS	Core Permeability Add>>> Core Permeability Add>>> Core Porosity 0.80 Core Sample Code Delete Date Show/Hide Arges Add
System Options	Exit

The **Add All >>> button** adds all of the available tracks, along with their associated layers, on the <u>left</u> side of the **Log Configuration Builder** window to your log. Once added to your log, the tracks will appear on the <u>right</u> side of the **Log Configuration Builder** window in the **Tracks** list.

<u>Note</u>: A new track will not be created, if you try to add a new track to your log that contains the same name as an existing track on your log. However, the layers associated with the added track will be added to the existing track, provided that they possess unique layer names.

The **Show All button** will enable all of the tracks listed on the <u>right</u> side of the **Log Configuration Builder** window to be seen on your log. The letter "**Y**", placed next to the track names, indicates that they are being shown on the log.

The Hide All button will configure your log, so that all of the tracks on your log are hidden from sight. The letter "N", placed next to the track names, indicates that they are <u>not</u> being shown on the log.

The **button** adds the highlighted track or layer, on the <u>left</u> side of the **Log Configuration Builder** window, to your log. Once added, this track and/or layer will be visible in either the **Tracks** or the **Layers** list on the <u>right</u> side of the window.

<u>Note</u>: If you add a track and/or layer to your log containing the same name as an existing track and/or layer, the new track and/or layer will not be created. Therefore, you must rename your track and/or layer prior to adding it to your log.

Delete

The **button** deletes the track or layer that is highlighted on the <u>right</u> side of the **Log Configuration Builder** window.

Show/Hide

The **button** will toggle between **Show** and **Hide** for the highlighted track on the <u>right</u> side of the window. You can also show and hide tracks by **double clicking** on them: The letter "**Y**" (yes) signifies that the track is being shown on the log. The letter "**N**" (no) signifies that the track is hidden.

Showing or Hiding a Track

1. Click on (highlight) the track name from your log that you wish to Show/Hide.

- Show/Hide
- Click on the button and the letter "Y" at the beginning of the track name will change to the letter "N" signifying that the track is no longer displayed on your log. To Show or display the track on the log again, simply repeat the procedure.

Note: The Show/Hide button feature only works for tracks and not layers.

The **Move** button allows the user to move a track or layer. The button is used to move tracks and/or layers up or down within the Tracks or Layers lists on the <u>right</u> side of the Log Configuration Builder window. The order of the tracks and layers within their respective lists is the order in which they will appear on the striplog: tracks situated at the top of the list will be placed on the left side of the striplog, while those tracks found at the bottom of the list will be found on the **right** side of the striplog. Layers situated at the top of the list will be drawn on the track last, while layers found at the bottom of the list will be drawn first on the track.

Moving a Track or Layer

- 1. Click on Log Configuration Builder, under the Options menu selection, or use the Log Configuration Builder button on the Toolbar to activate the Log Configuration Builder window.
- 2. Click on (highlight) the track or layer that you wish to move on the right side of the Log Configuration Builder window.
- 3. Click on the Move button and the Move button will then display Move Start
- 4. Click on the track or layer that you wish to place the movable track/layer above and the track/layer will be moved above the track or layer you clicked upon.

Adding Tracks to a Log

- 1. Click on Log Configuration Builder, under the Options menu selection, or use the Log Configuration Builder button on the Toolbar to activate the Log Configuration Builder window.
- 2. Click on the **Log...** button at the upper left corner of the Log Configuration Builder window to activate the Log Format List window.
- 3. Select a Log from which to take available tracks or layers by double clicking on one of the SYSTEM Logs in the Log Format List window.
- 4. On the right side (active log) highlight the track that you wish the new track to be added above.
- 5. Click on the track from the list of tracks on the left side of the Log Configuration Builder window that you wish to add to your log.
- 6. Next, click on the **button** to add the selected track to your log and this will activate the following system message, "**Do you want to ADD the selected <TRACK> from the available log to the active log?"**

Note: When you add a track to your log, you will get the track and all of the layers associated with that track.

- 7. Click on the <u>Yes</u> button to activate the Get Name window.
- 8. You now have the option of either renaming the track or simply leaving it with its original name.

Note: Two tracks cannot share the same name. Accordingly, no tracks will be added to your log, if they share the same name as a track that already exists on the active (your) log.

9. Click on the **button** to add the track to your log and place its name in the active **Tracks** list on the right side of the **Log Configuration Builder** window and place the Track above the Track Name that was highlighted on the Right side.

Add All >>> **Note that the track will be moved to your log with all of its associated layers. Also, you may use the button to add every track listed on the left side of the Log Configuration Builder window to your active log. ** All new tracks added to the active log will be added above the highlighted **Track** on the right hand side of the Log Configuration Builder window. Please note that the tracks nearest to the top of the Tracks list are placed nearest to the left or top on the actual log. Adding Layers to a Track on your Log When you add a layer to your log, you must assign it to a specific track. Click on Log Configuration Builder, under the Options menu selection, or use the Log Configuration 1. Builder button on the Toolbar to activate the Log Configuration Builder window. button at the upper left corner of the Log Configuration Builder window to activate the 2. Click on the Log Format List window. Select a Log from which to take available tracks or layers by double clicking on one of the SYSTEM Logs in the Log Format List window. 4. On the left side of the window, click on the track containing the layer(s) you wish to add to your log and the layers contained in the selected track will then be displayed below in the Layers section. 5. Click on the specific Layer that you wish to add to your log, within the Layers section on the left side of the Log Configuration Builder window. 6. On the right side of the window, highlight the track that you wish to add the selected layer to. Add >>> 7. Click on the button to add the selected layer to the track on your log and the following system message will be activated, "Do you want to ADD the selected <LAYER> from the available log to the active log?" Yes button to activate the Get Name window. 8. Click on the 9. You now have the option of either renaming the layer or simply leaving it with its original name. Note: Two layers cannot share the same name. Accordingly, no layer will be added to your track if they share the same name as a layer that already exists on the active (your) track. ΠK 10. Click on the button to add the layer to your log and place its name in the active Layers list on the right side of the Log Configuration Builder window. Add All >>> Note: The button only works for tracks. You cannot use it to add all layers. **Deleting a Track** 1. Click on Log Configuration Builder, under the Options menu selection, or use the Log Configuration Builder button on the Toolbar to activate the Log Configuration Builder window. On the right side of the window, there is a list of all the tracks in your active log. Highlight the track that you wish 2. to delete or highlight the track that contains a layer you wish to delete. Note: When a track is highlighted, its layers will be displayed below in the Layers section. Delete 3. Click on the button and you will be prompted with the following system message, "Do you want

4. Click on the <u>Yes</u> button to confirm the deletion.

to DELETE the selected <TRACK/LAYER> in the active log?"

**Note that if you delete a track, all of its layers will also be deleted. **

Deleting a Layer

- 1. Click on Log Configuration Builder, under the Options menu selection, or use the Log Configuration Builder button on the Toolbar to activate the Log Configuration Builder window.
- 2. On the right side of the window, there is a list of all the tracks in your active log. Click on (highlight) the track that contains the layer you wish to delete.
- 3. Click on the Layer you wish to delete so that it become highlighted and the Clayers radio button is activated.

Note: When a track is highlighted, its layers will be displayed below in the Layers section.

- 4. Click on the **Delete** button and you will be prompted with the following system message, "Do you want to DELETE the selected <TRACK/LAYER> in the active log?"
- 5. **Click** on the <u>Yes</u> **button** to confirm the deletion.

Changing the Width of a Track

These widths are used for both screen display and printing purposes.

- 1. Click on Log Configuration Builder, under the Options menu selection, or use the Log Configuration Builder button on the Toolbar to activate the Log Configuration Builder window.
- 2. On the right side of the window, **click** on the **track** whose width you wish to modify and the current width of the track will then be displayed in the **Track Width** field, underneath the list of tracks.
- 3. Click in the Track Width field and enter in the new Track Width field value.
- 4. Press the **Tab** key on the keyboard to exit from the field and input the new track width.

<u>Note</u>: The total width of the log is determined only by the tracks that are active (indicated with a "Y"). The printable range for most printers is approximately 8" when printing in **Portrait** on 8.5" paper. Therefore, **do not make the total width of your log greater than the range of your printer**. You may have to experiment with your printer to determine its precise margin settings.

Sample / Core Description Transfer

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 fiks, mnr fild, 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 From 0 co Core Section	
 ✓ Transfer Depth Range ✓ Transfer Short Form ✓ Transfer Short Form ✓ Top Depth Only 	

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 **D**. You

The

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 *concerned* 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 \checkmark , 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 is when activated will transfer the **From** and **To Depth Interval** to the log. The **Transfer %** check box is 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 when activated will transfer the only the **From Interval** (or Top of the interval described) to the log.

Transferring one Sample Description

1.

Refresh Data Geology Dictionary Curve Maintenance Log Configuration Builder	Save Undo New Del First Prev ? Next Last List 1030 to 1035 Ss 100
Sample / Core Description Transfer Master Survey Group	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.
Shift Data Lithology Integrity Check Use Default Printer Settings Sidetrack Unwrap LAS	Selections for Multiple Description Transfer (Uncheck for Multi-Trans From 0 to 0 Single Transfer Single Transfer Core Section
System Options	Transfer Short Form Top Depth Only

- 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 **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.

Refresh Window	Sample / Core Description Transfer
Refresh Data	Save Undo New Del First Prev ? Next Last List
Geology Dictionary	1030 to 1035 Ss 100 %
Curve Maintenance	It gy, It gysh brn, m - c gr, occly vc gr, modly w srt, sbang - sbrdd, gtz, com
Log Configuration Builder	micas flks, mnr fld, occ trs sils cmt, predly disaggd, g est intgran por
Sample / Core Description Transfer	(18-24%), com - abnt brn o stng, bri yel flor, g insts mky yel cut flor.
Master Survey Group	
Shift Data	
Lithology Integrity Check	Selections for Multiple Description Transfer (Uncheck for Multi-Transfer)
Use Default Printer Settings	From 950 to 1030 Single Transfer
Sidetrack	Core Section
Unwrap LAS	🔽 Transfer Depth Range 🔲 Transfer %
	🔽 Transfer Short Form 🔲 Top Depth Only
System Options	

2. 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. 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 _?'
- 6. If the depths outlined in the system message are <u>correct</u>, then **click** on the **Yes 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 / 10**" 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 / 10**" or less, e.g. 1:96 or 1:48.

Transferring a Single Core Description

 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.
 Options

Refresh Window	Sample / Core Description Transfer
Refresh Data Geology Dictionary	Save Undo New Del First Prev ? Next Last List
Curve Maintenance Log Configuration Builder	1000 to 1003.5 Sh / mnr Ss lam. % 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,
Sample / Core Description Transfer Master Survey Group Shift Data	sbang - sbrdd, qtz, com micas flks, mnr fld, abnt sils cmt, com cly & pyric mtx, predly disaggd, predly tt / ns.
Lithology Integrity Check Use Default Printer Settings Sidetrack	Selections for Multiple Description Transfer (Uncheck for Multi-Transfer) From 0 to 0 From 0 to 0 core Section
Unwrap LAS	 ☐ Transfer Depth Range ☐ Transfer % ☑ Transfer Short Form ☑ Top Depth Only
System Options	

- 2. Use the database navigational tools First Prev ? Next Last to navigate through the records.
- 3. 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.

- 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 or 10" so you can see the core descriptions?"
- 8. Click on the <u>Yes</u> button to proceed with the transfer of the Core Description.
- 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 **1:200 or 5**". When the scale is changed back to 1:200 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

 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.

Options	_
Refresh Window	Sample / Core Description Transfer
Refresh Data	Save Undo New Del First Prev ? Next Last List
Geology Dictionary	
Curve Maintenance	1000 to 1003.5 Sh / mnr Ss Iam. 8
Log Configuration Builder	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,
Sample / Core Description Transfer	sbang - sbrdd, qtz, com micas fiks, mnr fid, abnt sils cmt, com cly & pyric
Master Survey Group	mtx, predly disaggd, predly tt / ns.
Shift Data	J. 🕑
Lithology Integrity Check	Selections for Multiple Description Transfer (Uncheck for Multi-Transfer)
Use Default Printer Settings	From 1000 to 1012 =>>> Single Transfer
Sidetrack	Core Section
Unwrap LAS	🔽 Transfer Depth Range 🔲 Transfer %
System Options	Transfer Short Form Top Depth Only

- 2. Then, **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. 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** or **10**", while avoiding any possibility of overlapping with the **Sample Descriptions** being displayed at the standard **Log Scale** of **1:240** or **5**".
- 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 **test button** and the following system message will be activated, "*Transferring Core Descriptions. Do you wish to change screen scale to 1:120 or 10" 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.

<u>Note</u>: 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 or 5**". When the scale is changed back to 1:240 or 5" the descriptions transferred will be turned off by default. Refer to Annotation builder display scale to see how to manage these annotations.

Master Survey Group

This option allows you to quickly build the Master Survey Group.

Definition: The user can imagine the master survey group as a compilation of multiple survey groups to define the well from spud to total depth. Power*Suite has enabled the user to enter multiple set of surveys from different measuring devises. The user can then take points from all the sets to build a Master Set of survey points that best defines the well path. This group is then compiled and then used to represent Power*Log in the TVD/SSL depth views. This survey set is also used to calculate or interpolate TVD values for all measured depth fields. If the user only has one survey set and has kept the group name as 1 then the Master Survey group does not have to be assembled.

How to Compile the Master Survey Group

The user must identify which Survey Groups they want used for the TVD / SSL depth views of Power*Log. The user must identify which group(s) of surveys and the starting survey point in that survey group. Once this is done the application then creates a Master Survey group that contains all the survey points from all the groups and there surveys points and then uses these to create the TVD and SSL presentations.

The Tie In or Kick of the shallowest survey points Survey group is used as a starting or reference point.

Options	Master Survey Group
Refresh Window Refresh Data	UWI 100153206323W500
Geology Dictionary Curve Maintenance Log Configuration Builder Sample / Core Description Transfer	Top Depth Survey Group 145 1 990 2
Master Survey Group	
Shift Data Lithology Integrity Check Use Default Printer Settings Sidetrack	Top Depth Select Survey Group] 990 2
Unwrap LAS System Options	Add Change Delete Calculate TVD Exit

How to Add a Survey Group

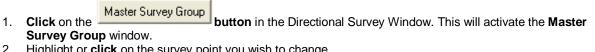
Master Survey Group

- 1. Click on the index our by croup button in the Directional Survey Window or click on Master Survey Group under the Options menu selection. This will activate the Master Survey Group window.
- 2. Click on the **button**. This will activate the **Choose Directional Survey** window.

		Choose Directional Survey	
		Jun 11, 2004 2 magnetic MWD	Query
		May 4, 2004 1 magnetic MWD Jun 11, 2004 2 magnetic MWD	Select
			Clear Field
			Cancel
			<u>·</u>
		,	
			Select
3.		Survey group you wish to Add and then click of	on the button . This will
	activate the Choose Sur		
		Choose Survey Start Point	
		MD (TVD; Drift Angle; Azimuth)	
		1000 (631.02; 82*; 120) 990 (630.25; 80*; 120)	Query
		1000 (631.02-82*-120)	
		1009 (631 53: 86'; 120) 1018 (632 51: 87.5'; 120) 1027 (632 57: 88 5'; 120) 1027 (632 75: 88 5'; 120)	Clear Field
		1035 (632,78; 90°; 120)	Cancel
			_
4.	Click on the Survey poir	nt you wish to start with and then click on the	Select button. This will place
	survey point's depth in the	ne top depth field the Survey Group ID selected	d into the Survey Group ID field.
	bba		
5.	Click on the	button and the Survey will be place in the list	

Note: This Survey and all subsequent surveys in this groups list will be added to the Master Survey Groups survey points until another Survey Group and its top depth has been added to the list.

How to Change a Survey Group



- 2. Highlight or **click** on the survey point you wish to change.
- Select Survey Group... button. This will activate the Choose Directional Survey window. 3. Click on the

Choose Directional Survey		
Jun 11, 2004 2 magnetic MW/D		Query
May 4, 2004 1 magnetic MWD Jun 11, 2004 2 magnetic MWD		Select
	_	Clear Field
		Cancel

Select 4. Click on the Directional Survey group you wish to Change and then click on the button. This will activate the Choose Survey Point window.

1000 (631.02; 82*; 120) Query 990 (630.25; 80*; 120) Select 1000 (631.02; 82*; 120) Clear Fiel 1018 (632.75; 89.5*; 120) Clear Fiel	1000 (631.02; 82*; 120) Query 990 (631.02; 82*; 120) Select 1000 (631.02; 82*; 120) Clear Fiel 1018 (632.51; 87.5*; 120) Clear Fiel 1027 (632.75; 89.5*; 120) Clear Fiel	1000 (631.02; 82*; 120) Query 990 (630.25; 80*; 120) Select 1000 (631.02; 82*; 120) Clear Fiel 1018 (632.51; 87.5*; 120) Clear Fiel	1000 (631.02; 82'; 120) Query 990 (630.25; 80'; 120) Select 1009 (631.02; 82'; 120) Clear Fie 1018 (632.51; 87.5'; 120) Clear Fie	Choose Survey Start Point MD (TVD; Drift Angle; Azimuth)	
1027 (632.75; 89.5*; 120)	1027 (632.75; 89.5°; 120)	1027 (632.75; 89.5*; 120)	1027 (632.75; 89.5*; 120)	1000 (631.02; 82°; 120) 930 (630.25; 80°; 120) 1000 (631.02; 82°; 120) 1009 (631.33; 85°; 120)	Select
				1027 (632.75; 89.5°; 120)	

- 6. This will place survey point's depth in the top depth field and the Survey Group ID selected into the Survey Group ID field.
 - Change

7. Click on the

button and the new Survey point will be placed in the list.

How to Delete a Survey Group

Master Survey Group

- button in the Directional Survey Window. This will activate the Master Click on the 1. Survey Group window.
- Highlight or **click** on the Survey points Start depth and Group ID you wish to Delete and then **click** on the 2. Delete

button. This will delete the survey point and Groups ID from the list.

How to Calculate the Master Survey Group Survey Points

If the Master Survey group has been altered in any way and the user exits the window they will be prompted with a calculation window. The user will have to recalculate the master survey group for your changes to take affect.

Ca	lcu	late	TVE	
00	i O OI	i aco	1.1.6	

button in the Master Survey Group window. This will activate the TVD

1. Click on the **bu** Calculation window.

TVD Calculation	
UWI	ABC Oil 12-25
Directional Survey	Calculate Directional Survey
Survey Group	
Calculation Method:	From:
	🔽 Calculate Master Survey Group
Calculation Method:	minimum curvature 💌 From: tie-in 💌
	🔽 Calculate Well Path
Well Path Curves	
Start Depth:	1460
Units:	TVD 🔽 🔽 Survey Indicators
	Calculate TVD Attributes
TVD Attributes:	Formation: Log Top TVD
Select All	MDT Data Morning Report: TVD Depth
Unselect All	Sidewall Core: TVD Depth
C	alculate Exit

Master Survey Portion

After editing the Master Survey group, the user must recalculate the Master Survey group, which calculation method either minimum curvature or drift angle calculations and from either tie-in or kick off co-ordinates. The Master Survey Group is compiled from points from different Survey Groups. **The Master Survey group if built is then used to perform all TVD / SSL Calculations within the application.**

Procedure

- 1. Select the Calculation method from the drop box. (Minimum curvature must have an azimuth and will fill in all the fields in the Survey Points Window, otherwise use drift angle to get only the TVD field completed in the Survey Points Window.)
- 2. Select the From Tie-In or Kick-Off co-ordinates.

The defaults are picked up from the User defined TVD Calculation portion of the **Directional Surveys Report'** window from the survey group that has the shallowest survey point, Kick Off is selected by default if not filled in. Remember that the data required for the **Kick Off** or **Tie In** reference is entered in the **Directional Surveys Report**, found under the **Reports** menu selection. Kick Off is selected by default.

Well Path Portion

The Well Path for lack of better terms will update any curve on your log with either TVD or SSL data and will start at any depth required. It basically plots a curve with respect to measured depth and the survey data's TVD calculations which can also be converted to SSL if a KB elevation has been entered into the Well Record located under the Edit menu selection.

Procedure...

1. If the user wishes to calculate or update the Well path curve activate the Calculate Well Path check box 🧖.

Well Path Curves... button and

- Select which curve you wish to populate with this data by clicking on the selecting the curve from the existing curve in the database.
- 3. Type in the Start depth for which the curve will first appear on the log.
- Select which units you would like this curve to be plotted or updated with from the Units selection box. TVD is the direct calculations from the survey points. SSL are converted with respect to the wells Kelly Bushing Elevation.
- 5. Select the Survey Indicators check box if the user wishes to have the survey points displayed at 45 degrees to the selected well path curve.

TVD Attributes Portion

Procedure...

1. If the user wishes to calculate or update the specified TVD fields within the various windows throughout the

Reports activate the Calculate TVD Attributes check box

The program is only able to determine the TVD at any depth covered by the directional surveys. Power*Log and Power*Curve have several windows in which the measured depth and corresponding true vertical depth are asked for. If you have directional surveys over that interval, the program will calculate the exact TVD for you. If it is outside the range of your surveys, it will be left as a manual entry.

2. Select or **click** on which fields (highlight) you wish to calculate for or recalculate if you have changed the survey data. Remember you have the ability to select all or unselect all.

Calculate	button.
	Dullon.

3. Click on the L Shift Data

This option allows you to globally shift log data to a different depth.

This will shift data permanently over any interval. You can select all or specific portions of a well's data for shifting or depth correction. This correction can encompass the entire well or a smaller depth interval and can be used to depth tie wireline logs or adjusted to strap corrections.

Note: It is recommended that if you use this option, you should first make a backup of the well. This operation does a global change of the entire database and if you mistakenly shift data, you can corrupt your entire database!!

1. Under the **Options** menu selection, **click** on **Shift Data** to activate the **Global Data Shift** window.

Options		
Refresh Window Refresh Data	Global Data Shift	×
Geology Dictionary Curve Maintenance Log Configuration Builder Sample / Core Description Transfer Master Survey Group Shift Data Lithology Integrity Check Use Default Printer Settings Sidetrack Unwrap LAS System Options	Well: Anybody Oil Sands UWI / API: Anybody Oil Sands Data Groups: All None Shift From Abandonment Plugs Top Depth: Top Depth: C Interval: to Start Shift To Core Boxes Core Plugs Curves Curves<	

- 2. Highlight the data groups that require shifting. To highlight all groups, **click** on the **button**.
- 3. **Double click** on the **Annotations** selection from the list to expand the annotation data groups. If you wish to shift all annotations, simply highlight the **Annotations** selection and proceed to **Step 5**.
- 4. Select the annotations you wish to shift by clicking on them and they will then be highlighted.
- 5. **Double click** on the **Curves** selection from the list to expand the curve data groups. If you wish to shift all curves, simply highlight the **Curves** selection and proceed to **Step 7**.
- 6. Select the curves you wish to shift by clicking on them and they will then be highlighted.

- 7. Decide which method of shifting is appropriate and then **click** on the corresponding radio button .
- 8. <u>Shift From (Top Depth)</u> Enter the top depth of the data to be shifted and every interval below that point will be shifted.

Note: In the diagram above, all the Annotations and Curves have been shifted 310 meters upward.

- 9. Shift From (Interval) Only the data located between these two intervals will be shifted.
- 10. Enter a value in the Shift To (Top Depth) field to indicate what depth you would like the data to be shifted to.
- 11. **Click** on the **Start Shift button** to initiate the shift.

You are also able to shift curve data on an individual layer basis, by using the **Curve Editor** window. For a temporary or visual shift of data you can utilize the **Track Offset** or **Layer Offset** selections located in the **Track Configuration** and **Layer Configuration** windows, but <u>only</u> if you possess the **Correlational Module**.

Lithology Integrity Check

This option is used to verify the integrity of the lithologic intervals. This makes sure that there are no overlapping intervals on the log or in the database.

Options	
Refresh Window	
Refresh Data	
Geology Dictionary	
Curve Maintenance	Lithology Integrity
Log Configuration Builder	
Sample / Core Description Transfer	
Master Survey Group	Well Tutorial Core Log
Shift Data	
Lithology Integrity Check	UWI /API: 100141901223W500
Use Default Printer Settings	OWITANI.)
Sidetrack	
Unwrap LAS	Check Fix Exit
System Options	

Checking and Fixing Lithologic Integrity

1. Click on Lithology Integrity Check, under the Options menu selection, to activate the Lithology Integrity window, which will default to the active well.

2.	If necessary, click on the well button and select the well that you wish to check or fix.
3.	Click on the button and Power*Log / Core & Curve will then check for integrity errors and display a message box showing the number of errors found. Click on the button to acknowledge the message.
4.	If there are any errors that you wish to fix, click on the Fix button to activate a system message which allows you to verify the deletion of the offending intervals.
5.	Click on the <u>Yes</u> button to delete the intervals or click on the button to cancel the operation.
Not	e: If you have fixed any intervals (deleted them), you will have to re-populate the log with the correct interpretive

<u>Note</u>: If you have fixed any intervals (deleted them), you will have to re-populate the log with the correct interpretive lithology.

Options	
Refresh Window	
Refresh Data	
Geology Dictionary	
Curve Maintenance	
Log Configuration Builder	
Sample / Core Description Transfer	
Master Survey Group	
Shift Data	L
Lithology Integrity Check	C
Use Default Printer Settings	l
Sidetrack	
Unwrap LAS	
System Options	

Use Default Printer Settings

Occasionally the Power*Suite printer settings gets confused in the initialization file and the user cannot activate either the Print Log window or the Printer Setup windows in the Morning and

e – Options Menu, page 262

Well End report print windows. This problem can be rectified by clicking on the Use Default Printer Settings and clicking on yes to the ensuing message.

Sidetrack

This procedure allows the user to keep the information from their existing well and create a sidetrack well. This allows the user to enter new data from an existing depth predetermined in a new well. Power*Suite has been programmed in such a way as to only allow the user to have one set of interpretive lithology at any given measured depth interval. This limitation will not allow the user to have multiple legs off a single well with respect to the geological interpretation. This procedure would allow the user to keep separate the geological data in a separate and unique well table for any pertinent geological data below the sidetrack or whipstock depth.

The user would then have the original well / log and have a second Sidetrack well / log to generate a second well report and log that would include the original well data down to the sidetrack depth where the user can then enter new data for the sidetrack well.

Note: The well you wish to sidetrack must be open at this time.

1. Click on the Sidetrack selection located under the Options menu selection. This will activate the Sidetrack window shown below.

Options	Side track 🛛 🗙
Refresh Window Refresh Data	
Geology Dictionary Curve Maintenance	Well to sidetrack 100141901223W500
Log Configuration Builder Sample / Core Description Transfer	New Well UWI 100141901223W502
Master Survey Group Shift Data	New Well Name
Lithology Integrity Check Use Default Printer Settings	Anybody et al Basing Side Track Sidetrack Depth
Sidetrack	100.00 Create Sidetrack
Unwrap LAS System Options	Exit

- 2. Click in the New Well UWI field and type in a new unique UWI. You can change only the last digit to make it unique. Usually, it is the event sequence from 0 to 2
- Click in the New Well Name field and type in a new unique name to rename the well. An example of a sidetracked well name would be: Anybody et al Basing renamed to Anybody et al Basing Side Track.
 In the Sidetrack Depth field, enter the sidetrack depth where you want to keep the data to.

4.	In the Sidetrack Depth lield, ent	ter the sidetrack depth where you want to h	keep the data to
5.	Click on the	outton, and the Warning window will be sh	own.
		About to create sidetrack for 100141901223W506	
		(<u>Y</u> es <u>N</u> o	

6. Click on the <u>Yes</u> button, and the Confirmation window will be shown.

sidetrack TutorialCoreLogS created

ОK

7. **Click** on the the window.

button. Then, click on the

the

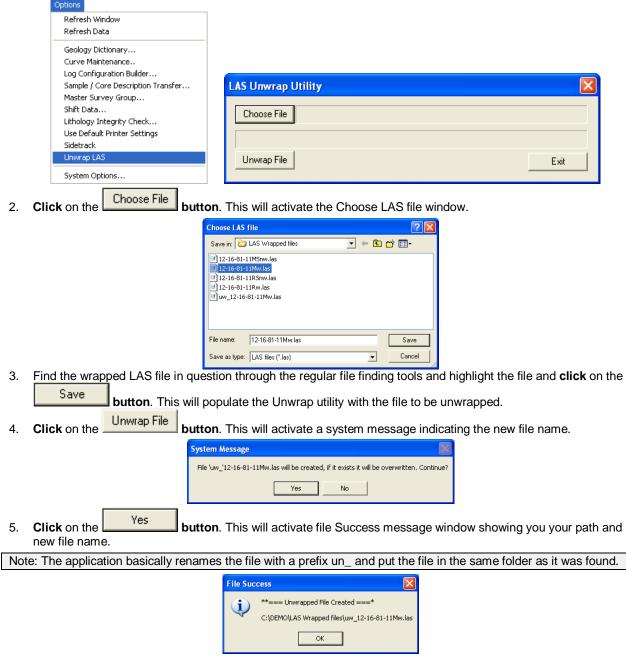
button in the Sidetrack window to exit

Unwrap LAS

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.



6.	Click on the	OK	Button and the LAS Unwrap w	vindow will also reflect the new file creation.	
			LAS Unwrap Utility	×	
			Choose File 12-16-81-11Mw.las		
			Unwrap File	Exit	
7.	If you are fini	shed then clic	k on the Exit button.	. This will close the LAS Unwrap Utility.	

System Options

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	UK	button
General Tab		

	System Options	
	General Fonts Display Favorites	
Options Refresh Window Refresh Data Geology Dictionary Curve Maintenance Log Configuration Builder Sample / Core Description Transfer Master Survey Group Shift Data Lithology Integrity Check Use Default Printer Settings Sidetrack Unwrap LAS		✓ Show All Wells at Startup
		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 \checkmark 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/YYYY	
MM/DD/YYYY MM-DD-YYYY	
MMM DD, YYYY	
YYYY/MM/DD	
MMM DD, YYYY YYYYYMM/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		Casing String Font	
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Survey Font		Layer Header Font		Date Font	
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Bit Record Font		Formation Top Font		Core Sample Code Font	
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Generic Category Font		Offscale Font		Sidewall Core Font	
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Depth Font		Core Box Font		MDT Font	
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Depth Orientation: 🔘 Vert. 🤇	Horz	Show Depth Units:		Set As Defaul	t Fonts: 💌
				Apply to C	urrent Log
				Restore	Defaults
				OK	Cancel

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

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

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

Generic Category Font - Allows you to determine the font style, type, color and size of your Long or Short Name display option in all the Generic Category Layers displayed on your log.

Depth Font - This allows you to determine the font style, type, color 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

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

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

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

Offscale Font - Allows you to determine the font style, type, color and size of your curve values displayed when the curve pegs off scale.

Core Box Font - Allows you to determine the font style, type, color and size of your Core Box data entered in the Core Box layer.

Casing String Font - Allows you to determine the font style, type, color and size of your Casing string data displayed on the Casing String layer. This data is entered trhough the Casing String Report.

Date Font - Allows you to determine the font style, type, color and size of your Date data entered in the Date layer.

Core Sample Code Font - Allows you to determine the font style, type, color and size of your Core Plug data entered through the Core Plug Report. This font is displayed on the Core Sample Code layer.

Sidewall Core Font - Allows you to determine the font style, type, color and size of your Sidewall Run and Sample Number data entered through the Sidewall Core Report. This font is displayed on the Sidewall Core layer.

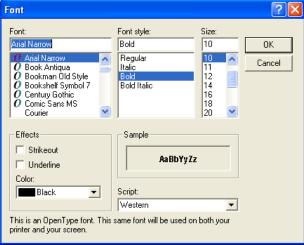
MDT Font - Allows you to determine the font style, type, color and size of your MDT Run and Test Number data entered through the MDT Report. This font is displayed on the MDT layer.

Set As Default Fonts This check box 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.

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 butt

Click on the **button** beside the **Font option** you wish to change and this will activate the Font Window.



- OK
- 4. 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 **OK** button in the Systems Options Tab dialogue window.

How to restore the System default Fonts

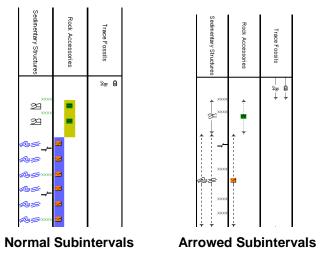
- 1. Click on System Options selection under the Options menu selection To activate the System Options window.
- 2. Then **click** on the **Font Tab** to activate the Tab.

- 3. Click on the Restore Defaults button.
- 4. Click on the Apply to Current Log button.
- 5. Click on the **DK** button in the Systems Options Tab dialogue window.

Display Tab

System Options
General Fonts Display Favorites
Symbology Arrowed Subintervals Frequency @ 5": 1 symbol every 2 _ ft Transparent Lithology Profile Use Global Symbols Use Ratio Scales Interbed Line Display Type Curve Backup Fill
Grain Size Scale: Wentworth Verbal Display: (mm) Display: Hard Edges Sit Datase
Fill Pattern Pattern Color:
Carbonate Textures Fill Pattern Color:
Interpreted Lithology Layer Show Bedding Contacts: Show Accessories: Monitor Other Height Width 9 inches 12 inches Image: Since
OK Cancel

Arrowed Subintervals - This check box v 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 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.

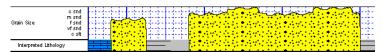
Interbed Line Display Type - This check box vehen activated will display the interbed data with a line display splitting the two lithology types or when unchecked will display the lithology in an interbed fashion as displayed below.



Curve Backup fill – This check box M 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 is 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.



Use Ratio Scales - This check box **I** when activated will change the depth scale to a ratio scale 1:200 versus when it is unchecked you will get the 2' 5" = 100' type American scales if you are in the Imperial Module.



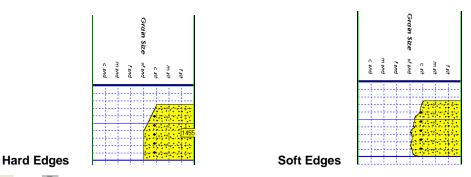
Grain Size Scale List box - You may choose between Wentworth, Canstrat or Amstrat scales, when using the Grain Size Builder. The Wentworth Grain size only allows full grain size while Canstrat / Amstrat allow half grain sizes when drafting in the Grain size and matrix layers.

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 I 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.

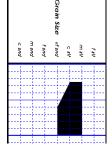
C Hard Edges This C radio button will display the grain size with strait edges and right angles between the grain sizes. The illustration below is shown with Lithology Profile activated.

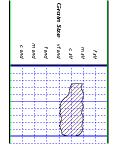


Soft Edges This **S** radio button will display the grain size with curved edges and rounded angles between the grain sizes.

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

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 Layer.

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

Interpreted Lithology Layer - Show Bedding Contacts: V -- When this check box V is activated the bedding contacts (lines) between the drawn lithology types in the Interpretive Lithology Layer 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 <u>vertical</u> 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 <u>horizontal</u> 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.

1, 2

Note: You must restart Power*Log / Core & Curve for the Monitor Width / Height changes to take effect.	
Directional Survey display: Azimuth This drop box option will display your directional surveys on your lo either Quadrant format N 62 ° W) or Azimuth format (AZ 298 °)	g in Sidevall
Display TVD check box when activated will display the survey point data with True Vertical depth values	vall Core
Display SSL check box 🗹 when activated will display the survey point data with Sub Sea values.	

Sidewall Core Run and Core No. This check box v when activated will display the Sidewall Core Run & Core numbers above the core triangle indicator on the Sidewall Core layer.

Favorites Tab

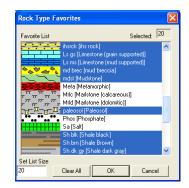
This tab allows the user to define their System favorites for all the data categories that support these choices. This tab dialogue also allows the user to access the % Lithology Sort order for the % Lithology Track.

System Options				×
General Fonts Display	Favorites			
Rock Favorites	% Lithology Sort Order	Fractures Favorites		
Acc Favorites	Sedimentary Favorites	Trace Fossil Favorites		
Diagenesis Favorites	Generic Sym. Favorites			
			OK	Cancel

Rock Favorites - The **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 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 Accessory Favorites button in the System Options window to activate the Accessory Favorites window shown below:



- 2. Click on the Clear All button in the Accessory Favorites list window to prepare it for the selection of your Accessory Favorites.
- Select by clicking on or highlighting some of your more commonly used Accessories from the Accessory Favorites 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.

Diagenesis Favorites Button

The Diage	nesis	button when activated allows the user to determine the number of favorites for their favorite
0		then displays them in a pop-up menu generated by a right click in the Diagenesis layer / track x when the layer is activated.

How to Change the Diagenesis Favorites Selection

1.	Click on the	iagenesis	button in the	System Options win	dow to act	tivate the Diagenesis window.
				Diagenesis Favorites		
				Favorite List	Selected: 20	
				calcomt [Calcareous Cement] calcont [Calcareous Cement] calcont [Calcet Nodule; cement [Cement undifferentialed] chalco pyr cmt [Chalcopyrile Cement] chalcopyrien do [Chalcopyrile Nodules chalcopyrien do [Chalcopyrile Nodule] chalcomt [Chert - dark Cement] chalcomt [Chert - dark Nodule] chaltornd [Chert - fostilierous Nodule] chaltornd [Chert - light Cement] chaltornd [Chert - light Nodule] chaltornd [Chert - light Nodule]	-	
				Clear All OK	Cancel	
				Set List Size		
2.	Click on the	Clear All	button in the	Diagenesis Favorite	s list wind	ow to prepare it for the selection of your
	Diagenesis Favo			5		
3.	Select by clickin	g on or hig	hlighting som	e of your more comr	nonly use	ed Diagenesis from the list window.
4.	Click on the	ОК		urn to the System Op	•	C C

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

Lithology Sort Order Button-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 below.

How to Change the % Lithology Sort Order

% Lithology S	ort Order		X
Rock Type List			
	Sh bm mdst	^	
д й д й	paleosol		
	Coal		
$\oplus \oplus \oplus \oplus$	Cmt		
	Cht dk		
	Cht It		
	Cht vool		
AAAA	Cht foss		
\$\$\$\$\$	Glac Till		
MR#3⊘	Brec		
00000	Cgl mixed		
	Cgl dk cht		Move
	Cgl It cht		
• • • •	Cgl vcol cht		ОК
	Sitst		
J	Ss	*	Cancel

- 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.

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4. Click on the Move button. The Move button will then transform into a Move Start

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.

button.

- 6. If you wish to change the order of more rock types proceed with steps 3-5.
- 7. If you are pleased with the newly rearranged % Lithology Rock order **click** on the **button**. This will close the % Lithology Sort Order window and put the user back into the Systems Options window. Then,

click on the Save 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

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

Sedimentary	Favorites		×
	Sedimentary Fav	orites Selected:	26
Beddings / Cros	s beddings		,
😻 chevxbdg	(chevron cross beddin)	al	^
💴 cm bed [(Centimeter Bed]		
💶 dm bed [l			
>>>> hebnxbdg) [herringbone cross bed	lding]	~
Laminations / Cr	oss Laminations		
	limbing ripple cross lamir		^
	ontorted/slumped lamin		
	current ripple cross lamir	hation]	
Hasrlam [f	laser laminations]		×
Other			
	all and pillow structure]		<u>~</u>
	ioturbated - barren]		
	ioturbated - churned]		
Set List Size	lioturbated - moderately]		×
26	Clear All (DK Car	ncel

- 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

The **Fractures 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:



- 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 **DK 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

Trace Fossil Favorites

The **Line Possil ravolues** 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.

Trace Fossil Favorites	
Favorite List Selecte	ed: 22
Ga Ga [Gastrochaenolites]	~
 GI [Glossifungites] 	
ov Gy [Gyrophyllites]	
H H [Helminthopsis]	
K K [Kouphichnium]	
L L [Lockeia]	
Lo Lo [Lorenzinia]	
Ma Ma [Macaronichnus]	
Mx Mo [Monocraterion]	
Mp Mp [Macanopsis]	
N N [Nereites]	
Ne Ne [Neonereites]	
0 (Ophiomorpha)	
P P [Planolites]	×
Set List Size	
22 Clear All OK	Cancel

- 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.

How to Change the Generic Symbol Favorites Selection

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

Generic Symbol Favor	ites		Ľ
Category			Selected: 3
flags geotechnical		-	
Favorite List			
ton dh (dead head) しい hardground [hg] (P) pyr (pyrite)			
SL short [long]			
Clear All		OK	Cancel
Set List Size 50			

- 2. Utilize the Category Drop box to select your Generic Symbol Group.
- 3. Click on the Clear All button in the Generic Symbol Favorites list window to prepare it for the selection of your Generic Symbol Favorites.
- 4. Select by **clicking on** or highlighting some of your more **commonly used** Generic Symbol from the list window.
- 5. **Click** on the **button** to return to the System Options window.
- 6. Click on the **Save** button in the System Options window, when you are finished.

Chapter Six - Window Menu

Cascade

Use this command to arrange multiple opened windows in an overlapping fashion.

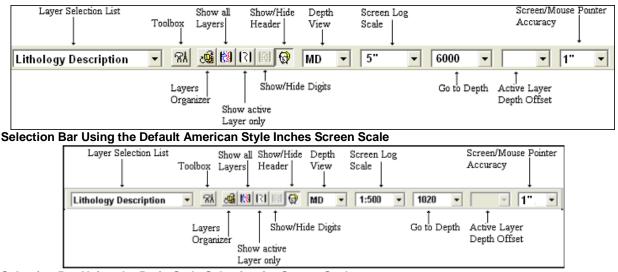
Tile

Use this command to arrange multiple opened windows in a non-overlapping, side-by-side fashion.

Arrange Icons

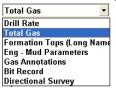
Use this command to arrange the icons for minimized windows at the bottom of the main window. If there is an open document window at the bottom of the main window, then some or all of the icons may not be visible, because they will be underneath this document window (minimize the open window or adjust the size to see all of the minimized windows).

Chapter Seven - Toolbar Functions Layer Selection List



Selection Bar Using the Ratio Style Selection for Screen Scale

Located on the far left side of the Selection Bar, this field allows you to select or activate specific layers from the active track. The active layer's name is shown on the Toolbar, when the drop list is hidden.



The layers in the **Layer Selection List** are displayed according to this list. The layers drawn last in the track are displayed closer to the top of the list, while the layers drawn first are displayed towards the bottom of the list. The layer that is highlighted (in this case, **Total Gas**) will appear in the **Layer Selection List** field and is referred to as the **active layer**. The active layer is the only layer that can be edited. An indented layer is hidden or not shown on the

active track/log. This list can be modified by the Layers Organizer button on the toolbar or under the view menu selection

Data Editing Tools of Active Layer

Provides specific tools for editing the active layer

Activating a Layer's Data Editing Tool

- 1. Click on the track that you wish to edit to make it active (the active track has a green outline).
- 2. Use the Layer Selection List to select the layer of the track that you wish to edit. The active layer's name should be displayed in the Layer Selection List field on the Toolbar.
- 3. Double click on the track (with the active layer), that you wish to edit or click on the M Data Editing Tool of Active Layer button.

Layers Organizer

Allows you to choose which layers of the active track are active or inactive and shown or hidden.

Click on the track for which you wish to view the layers and the selected track will be highlighted with a green border.

Click on the Layers Organizer button on the Toolbar to activate the Layers Organizer window for the active track.



The order of the layers on this list determines the order in which the layers are drawn on the track. The layer at the top of the list is drawn last and the layer at the bottom is drawn first. It's a good idea to put the most important layers nearest the top of the list, so that when drawn they are on the top. Remember that the active layer displays its grid pattern.

The layers that are shown on the track are marked with a " \mathbf{Y} ", the hidden layers are marked with an " \mathbf{N} ", and the active layer is denoted with a ">".

To show all layers, click on the Show All button. To hide all layers, click	ck on the	button. To toggle a
		00
		n . You may also double
click on a layer to change its current state. To make a layer active, highligh	ht it and click on t	he Active [>] button.

Moving a Layer...

Highlight the layer and click on the	Move	button, which will then display,	Move Start
Then, click on the layer that you wis	h to position	the moved layer above.	

Moving the Grid for an Active Curve layer...

- 1. Make a curve layer active by highlighting a curve layer and clicking on the Active [>] button
- 2. Highlight the **Movable Grid** selection and **click** on the **Move button**, which will then display,
- 3. Click on the layer over which the grid pattern will be placed and the **Movable Grid** selection will then move one line above the selected layer.
- 4. Click on the **DK** button to exit from the Layers Organizer window.

Show All Layers

Displays every log layer that exists in your active track

To Show All the Layers of a given Track...

- 1. Click on the track you wish to view to make it active and it will be highlighted with a green border.
- 2. Click on Show All Layers, under the View menu selection, or click on the Show All Layers button on the Toolbar.

Show Active Layer

Enables only the active layer, within the currently active track, to be seen on screen

- 1. **Click** on the track you wish to view to make it active and it will be highlighted with a green border.
- 2. Click on Show Active Layer, under the View menu selection, or click on the Show Active Layer button on the Toolbar.

Show/Hide Header

Toggles between displaying the Header and removing it from the viewing area

Click on Show/Hide Header, under the View menu selection, or click on the Show/Hide Header button on the Toolbar.

Show/Hide Digits

This function will either display or hide digits from the grid of an active curve layer on your log.

Click on Show/Hide Digits, under the View menu selection, or click on the Show/Hide Digits button on the Toolbar.

Depth View Mode



VS

1. Click on the down arrow on the ssi

Depth View mode selection on the Selection Bar and select the desired

depth view for your Log in Power*Log or OH

Log Scales

Sets the screen scale to your specifications. The minimum screen scale is 1:5 and the maximum is 1:5000 or if you are in the inch scale 0.25" = 100' to a maximum of 50" = 100'.

as shown in Power*Curve.

Changing the Scale of the Screen (Two Methods)...

1. Click on the Log Scales field to highlight the current scale, type in the new scale, and then press the Tab key to exit from the box and activate the new scale.

<u>OR</u>

2. Click on the Log Scales field drop box to display the values contained within the Log Scales drop down menu and then select the desired scale.

Go to Depth

You can easily go to specific depths on the active striplog, using this drop box on the Toolbar.

- 1. Click in the Go to Depth field.
- 2. Type in the depth in the Go to Depth field.
- 3. **Depress** the **Tab key** on your keypad activate your depth requirement and it will then be displayed at the top of the log.

Depth Offset of Active Layer

Lets you specify the Depth Offset of the active layer, if you have the Correlational Module. Depth Offsetting can be described as shifting a data layer up or down in relation to the rest of the log.

Offsetting Layer Data...

- 1. Click on the track that contains the layer you wish to offset, to make it active.
- 2. Then, make the layer you want to offset active by selecting it from the Layer Selection List.
- 3. Now, **click** on the **Depth Offset of Active Layer** field to place the cursor in the field.
- Next, type in a number to represent how far you want to offset the data of the active layer. A positive (+) number will move the data lower down the log, while a negative (-) number will move the data higher up the log.

5. Press the **Tab** key on the keyboard to exit from the **Depth Offset of Active Layer** field and to initiate the offset.

Screen Accuracy

This drop box varies the depth increment of the mouse pointer as it moves on the log according to the screen accuracy selected in this drop box. This increases or decreases the accuracy of your mouse pointer, while locating more specific depths with your mouse.

Changing the Screen Accuracy of the Mouse Pointer

- 1. Click on the Screen Accuracy field to activate the drop down menu.
- 2. Select an available increment from the **Screen Accuracy** drop down menu by clicking once on the desired increment and your selection will be displayed within the **Screen Accuracy** field accordingly



Note: When you enter the **Data Editing Tool** window of a given layer, the interval will default to the lithologic interval of the record that you are working on at that time.

TRACK/LAYER TOOLBOX

Ages	Formation
Annotation	Annotations
Bedding Contacts	Interpretive Lithology Builder
Bioturbation	Bioturbation Builder
Bit Record	Bit Record Report
Carbonate Texture	Carbonate Texture
Carbonate Texture Matrix	Carbonate Texture Matrix Builder
	Casing Data Entry window
Casing Core	Core Report
Core Box Data	Core Box Data Builder
Core Plug Data	Core Plug Data Displays
Curve Fill Curves	Curve Fill Editor Curve Editor
Date	Drilling Schedule
Dip Meter	Dip Meter Data Entry Window
Directional Survey	Directional Survey Report
Detailed Lithology	Detailed Lithology
Diagenesis	Diagenesis Builder
Energy Change	Visual Range Builder
Formation	Well Formation
Fractures	Fractures Builder
Framework	Framework
Generic Category	Generic Category Builder
Generic Symbols	Generic Symbols Builder
Grain Size	Grain Size Builder
Grain Size Matrix	Grain Size Matrix Builder
Graphics	Graphics Editor
Hole Dip Meter	Dip Meter Data Entry Window
Lithology Description	Annotation (Lithology Description layer)
Lithology	Rock type builder and Accessory Builder
Multi Array Curve Data layer	Multi Array Layer Builder
MDT	MDT Data Entry window
Oil Show	Hydrocarbon Show
Oil Staining	Oil Staining
Percent Lithology	Percent Lithology Builder
Percent	Percent Builder
Porosity Percent	Porosity Grade
Porosity Type	Porosity Grade
Rock Accessories	Rock Accessories Builder
Rounding	Rounding
Sedimentary Structures	Sedimentary Structures Builder
Sidewall Cores	Sidewall Cores Report
Sneider's Rock Type (Core)	Sneider's Rock Type (Core) Builder
Sneider's Rock Type (Geo)	Sneider's Rock Type (Geo) Builder
Slide / Rotate	Slide / Rotate
Sorting	Sorting
Test	Test Report
Trace Fossils	Trace Fossils Builder

Chapter Eight - Log Layers Ages Layer

This layer allows you to display the formation ages on the log.

Adding a Formation / Age

1. **Double click** on the **Ages** track / layer to activate the **Well Formation** window shown below. The user can also click on **Formation**, under the **Reports** menu selection.

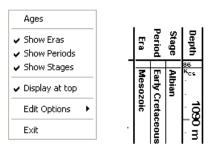
	Del First Prev ?	Next Last K.B.	Ground 21.1	Casing Flang 21.08
Group:	Long Edmonton	Boundary Ty	pe: conf [conformabl	1
Formation t Member: mts	Tidsdale Main Tidsdale Sand	Fault Ty Seq#: 0	/pe: Long Name Display De	pth:
Era	. ·		Sub	sea: -361.03
mesozoic	Series	T	Tops MD	TVD
Period	Stage		Prognosis:	370
k [cretaceous]	▼ aptian	T	Sample: 445	385.93
Age: million	n years Thickness		Log: 445	385.93
Age. I have himler	MD: 77.5	Calculate	Display	
Alignment: left	▼ TVD: 13.2	8 Thickness	C Prog. 🖲 Sm	pl. 🔿 Log
Evaluation:		Annota	ations 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				
dropped down to a m	or 664m (MD) or 360.2			
dropped down to a m	or 664m (MD) or 380.2			To Long Desc

2. Enter in the necessary information and **click** on the **Save** button

Note: The information entered into the Era, Series/Period and Stage is represented in this track / layer. The top depths are entered into the Sample Top (MD) field. If the Eras, Series/Period and Stages are all identical they will run together as a continuous age.

To Change the Display

1. Right click on the Ages track / layer to activate the pop out menu. And click on one of the selections.



The example above has the Eras, Periods and Stages portions of the track / layer all turned on. Also the Ages are displayed at the top of the interval versus the middle of the interval.

- 2. A second way to change the Ages display is to make the Ages layer active by **clicking** on the **Ages track** and **selecting** the **Ages layer** from the layer selection list.
- 3. Click on the Layer Configuration button on the Toolbar or click on the Layer Configuration under the Edit menu selection. This will activate the Ages Layer Configuration window.
- 4. Click on the Formation and Age Display Tab to activate the window shown below. The user can now select which part of the ages they wish to display along the vertical axis of the log and also whether they wish to display the data at the top or middle of the interval.

Dip Meter Definitions

ancel

Help

Active Layer Configuration [Ages]	Active Layer Configuration [Ages]
Layer Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undd Data Type: Ages y Diplay Layer Name or Curve Scale on Track. Display Layer Name or Curve Scale on Track. Display Scale Pacements Display Scale Pacements Display Scale Pacements Display Date Axis Grid Display Date Axis Grid Display Date Axis Grid Display Date Axis Grid Display Cancel Help	Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Save Uncid Formation Display Age Display Formation Display Age Display Formation Short Name Display on Layer Format 2 Formation Display at top Display at top Display at top Display at top Display at top

5. **Click** on the **Save button** to Exit and Save the Layer configuration settings.

All Log layers - Link Layer

This is available in any layer on the right click menu. It gives the user the ability to add a link any file and will open if it has a windows compatible application.

Edit Options	
Add / Edit / Open Link Exit	

How to Add a Link to any Layer

- 1. **Right Click** on any layer and you will get (at a minimum) this pop out menu options. If the builder was open you would probably get more options.
- 2. Select Add / Edit / Open Link and if no Link exists you will get an Empty Links Window as shown below with the Depth field filled in with the depth you right clicked at.

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Links		X
Save Undo	New Del First Prev ? Next Last	Depth <mark>4319</mark>
File Name:		
Path:		
Remarks:		~
		<u>~</u>
	Open File in Windows®	Open Folder

3. Click on the **button** to locate the file you want to link to the layer. This will activate the Select file to Link to window shown below

Select File t	o Link to)		? 🗙
Look in: 🔀	core		- + 🗈 I	•
4500-6502 5500-6502 5502.6-650 5502.6-650 5502.6-650 5505-6507 5505-6507	:.6sm.JPG D5.jpg D5sm.JPG '.5.jpg	(1)6507.5-6510.jpg (1)6507.5-6510sm.JPG (1)6510-6512.5.jpg (1)6510-6512.5sm.JPG (1)6512.5-6515.jpg (1)6512.5-6515sm.JPG	₽]6515-651	7.6sm.jpg
File name:	6502.6-6	505.jpg		Open
Files of type:	All files (*	.*)	•	Cancel

4. Navigate to the file you wish to link to your log and **Highlight the file name** and then **click** on the **Den button**. This will fill in the Links window with the file name and path portion of the Links window as shown below.

Links		×
Save Und	New Del First Prev ? Next Last 4319.57	
File Name:	6502.6-6505.jpg	
Path:	C:\DEMO\photos\photos\core\	
Remarks:	This was taken in the field after recovering the core. Indicates all the low permeability as tons of bleeding Oil	~
	Open File in Windows® Open Folde	er

- Save
- 5. Type in any Remarks in the Remarks field that you want to explain the link and then Click on the **button or press ALT-S** and then click on the appropriate button out of the ensuing Shortcut Options window.

You will now see a paperclip $\widehat{\mathbb{N}}$ symbol on the layer.

N.B. If the well is then Exported (Data Transfer Module) creating an *.exp file and then Imported (Data Transfer Module) the data files and links imbedded into the Original Log are then redirected and inserted into into the install folder for Power*Suite. The default install folder structure would be C:\PowerSuite_V12|Linked_Files with the original name of that file.

How to Edit a Link to any Layer

1. **Right Click** on any track / layer where you see a paperclip symbol and you will get (at a minimum) this pop out menu options.

Edit Options	×
Add / Edit / Open Link Exit	

2. Select Add / Edit / Open Link and if a Link exists you will get a Links Window as shown below with the fields filled in.

Links		×
Save Und	o New Del First Prev ? Next Last Depth	
File Name:	6502.6-6505.jpg	
Path:	C:\DEMO\photos\photos\core\	
Remarks:	This was taken in the field after recovering the core. Indicates all the low permeability as tons of bleeding Dil	~
	Open File in Windows® Open Folde	er

3. Click on the **button** to locate a different file you want to link to the layer. This will activate the Select file to Link to window shown below

Select File to	o Link to			? 🛛
Look in: 🔀	core		💌 🕂 🖻 (* 🎟 •
6500-6502 6500-6502 6502.6-650 6502.6-650 6505.6507 6505-6507	.6sm.JPG D5.jpg D5sm.JPG .5.jpg	(1)6507.5-6510.jpg (1)6507.5-6510sm.JPG (1)6510-6512.5.jpg (1)6510-6512.5sm.JPG (1)6512.5-6515.jpg (1)6512.5-6515sm.JPG	a 6515-6517	7.6sm.jpg
File name:	6502.6-65	505.jpg		Open
Files of type:	All files (*.	.*)	•	Cancel

4. Navigate to the file you wish to link to your log and **Highlight the file name** and then **click** on the **button**. This will fill in the Links window with the file name and path portion of the Links window as shown below.

Links	
Save Und	New Del First Prev ? Next Last Depth
File Name:	6502.6-6505.jpg
Path:	C:\DEMO\photos\photos\core\
Remarks:	This was taken in the field after recovering the core. Indicates all the low permeability as tons of bleeding Oil
	Open File in Windows® Open Folder

5. Change the Remarks in the Remarks field that you want to explain the link and then Click on the **Save** button or press ALT-S and then click on the appropriate button out of the ensuing Shortcut Options window.

How to Delete a Link to any Layer

1. **Right Click** on any track / layer where you see a paperclip ^{III} symbol and you will get (at a minimum) this pop out menu options.



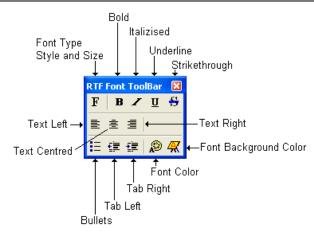
2. Select Add / Edit / Open Link and if a Link exists you will get a Links Window as shown below with the fields filled in.

		Links	
		Save Ur	ndo New Del First Prev ? Next Last Depth
		File Name:	6502.6-6505.jpg
		Path:	C:\DEMO\photos\photos\core\
		Remarks:	This was taken in the field after recovering the core. Indicates all the low permeability as tons of bleeding Oil
			Open File in Windows® Open Folder
3.	Click on the Del button. T	his will a	activate a Confirmation Message window.
		Confirma	tion 🔀
		\bigcirc	You are about to delete a record from the database. If you click Yes, you wont be able to undo this Delete operation. Are you sure you want to delete this record? Yes No Cancel
4.	Click on the Yes b	utton.	

Annotations

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.

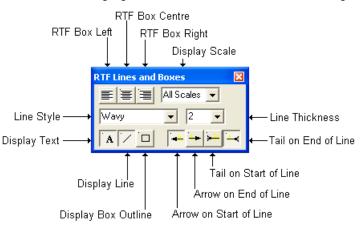
■ 로 클 At the flashing cursor or with some text highlighted these buttons will orient the text line or paragraph left, centered or right within the box outline.

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.

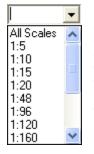
At the flashing cursor or with some text highlighted this button will activate a new Font color.

At the flashing cursor or with some text highlighted this button will activate a Font background color.

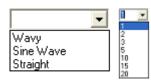


Overview of RTF Lines and Boxes Toolbar buttons.

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.

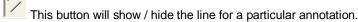


Display scale drop box: This allows the user to change the display scale for each annotation to adapt to the printed or viewing scale of the log. The All Scales selection will display the annotation at all viewing and printing scales from 1:5 to 1:5000. If you select a different display scale then the 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.

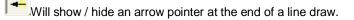


Line Style Selector and Line Thickness drop boxes: These drop boxes allow the user to select a different line style for their drawn line as well as the line thickness for the line that is associated with each individual annotation. You can only have one line per annotation. The line can only be redrawn and not moved.

A This button will show / hide the text for a particular annotation.



This button will show / hide 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.



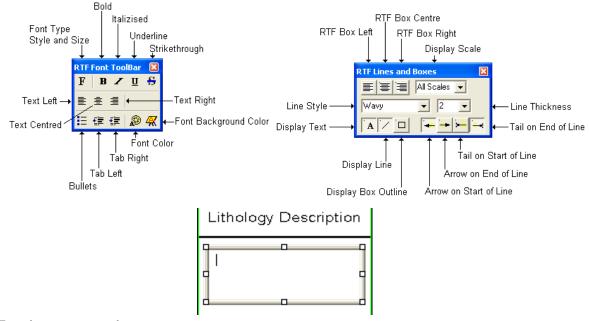
Will show / hide an arrow pointer at the start of a line draw.

Will show / hide a tail at the end of a line draw.

Will show / hide a tail at the start of a line draw.

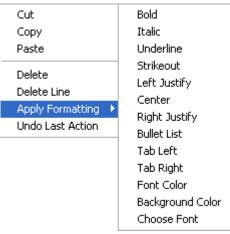
Adding Annotations / Lithology Descriptions...

- 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**.
- 2. 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. Type in your annotation.

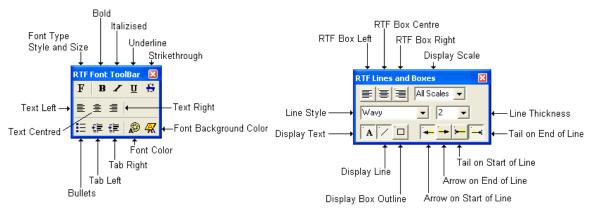
4. Utilize the options in the **RTF Font** and **RFT line and box toolbars** to get the desired effect on your annotation. To change individual font characteristics you would highlight the font by clicking and dragging and then select the button from the toolbar or utilize the user **right click inside the annotation field** and **select** the **Apply formatting** selections to change the font style color etc.



- 5. If you would like to **undo** the last action taken within an annotations formatting the user can **right click inside the annotation field** and select the **Undo Last formatting** selection.
- 6. Click anywhere outside the annotation box to close the toolbars. Repeat steps 2-6 for more annotations.

Drawing a Line...

- 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. 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...

- 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.
- 4. Click and drag the mouse pointer to the Annotation's/Lithology Description's new position.
- 5. Release the mouse button, and the Annotation/Lithology Description will be redrawn at its new location.
- 6. **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 the Delete selection and you will receive the following system message.



- 5. Click on **Yes** button and the selected Annotation/Lithology Description will be deleted accordingly.
- 6. Click outside of the highlighted text field to close the toolbars.

Deleting Lines associated with Annotations...

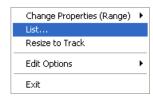
- Make a Lithology Description or Annotation layer active by clicking on the track that has an Annotation layer on it and then selecting that annotation layer you want to work with from the Layer Section list on the Selection Toolbar.
- 2. Click in annotation field box outline that is associated with the line 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 Line selection and the Line will be deleted and the Annotation toolbars will automatically close for you.

Using the List functionality to copy, move to and delete annotations.

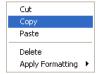
- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. **Right Click** anywhere within the track 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
625 630m Ss: It gy, It gy bm, f - vc gr, modly srt, sbrdd - sbang, qtz, com micas fiks, oc 80.92 1600 - 1610m ss: It gy, with I rng tt, w srt, sbrd 144.98 145m Ss: It gy, It bm, It gy bm, f gr grdg - slt, w srt, sbrdd, qtz, tr carb fiks, v arg, (160.91 165m Sh: aa. 170.62 170.62 170m Ss: wh, It gy, Igred, modly w srt, sbrdd, qtz, tr dk mnris, tr fid, com dolic cm
600.42 610 - 615m Ss: It gy, It gy bm, m - vc gr, occly f gr, modly w srt, sbridd - sbang, qt 600.42 610 - 615m Ss: It gy, It gy bm, m - vc gr, occly f gr, modly w srt, sbridd - sbang, qt 620 620 - 625m Ss: It gy, It gy bm, f - vc gr, modly srt, sbridd - sbang, qtz, com micas flks 620 620 - 625m Ss: It gy, It gy bm, f - vc gr, modly srt, sbridd - sbang, qtz, com micas flks 630 630 - 635m Ss: It gy, It gy bm, f - vc gr, modly srt, sbridd - sbang, qtz, com micas flks 631 630 - 635m Ss: It gy, It gy bm, f - vc gr, modly srt, sbridd - sbang, qtz, com micas flks 632 630 - 635m Ss: It gy, It gy bm, f - c gr, modly srt, sbridd - sbang, qtz, com micas flks 633 634 - 645m Ss: It gy, It gy bm, f - c gr, modly wr, str, sbridd - sbang, qtz, com micas flks 634 640 - 645m Ss: It gy, It gy bm, f - m gr, occly c gr, wr, str, sbridd - sbang, qtz, com micas flks
625 - 630m Ss: It gy, It gy brn, f - vc gr, modly srt, sbrdd - sbang, qtz, com micas flks, occ fld, tr chlor, predly disaggd, ptch cly mtx, occ trs dolic cmt, pyric ip, g est intgran por (16- 20%), tr ptch brn o stng, bri yel flor, p stng bri yel cut flor.
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 **below 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 **Copy** to Clip **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.



9. 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 O Arial O Arial Black O Arial Black O Book Antiqua O Bookman Old Style O Bookshelf Symbol 7 O Century Gothic	Font style: Italic Regular Italic Bold Bold Italic	Size:	OK Cancel
Change Properties (Range) ↓ List Resize to Track Edit Options ↓	Change Font Sizes Change Font Color Box Alignments Change Display Scale	This is an OpenType font. This printer and your screen.	Sample AaBbYyZ: Script: same font will be used o		

- 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 **DK button**. This will activate the Format range window.

Format R	ange			X
Depth Interval:	(Use 0 to 0 0	for the whole lo to 0	og) 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 >>
Edit Options		OK Cancel
Exit		

- 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.

Format Range	×
Use 0 to 0 for the whole log	ОК
	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 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.

Change Properties (Range) 🔸	Change Font Sizes	
List	Change Font Color	
Resize to Track	Box Alignments 🔹 🕨	Left
Edit Options	Change Display Scale	Center Riaht
Exit		Right

- 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.

Change Properties (Range)	Þ	Change Font Sizes	
List		Change Font Color	
Resize to Track		Box Alignments	•
Edit Options	Þ	Change Display Scale	
Exit			

- 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.

Select Scale	
Choose a scale	ОК
All Scales 💌	Cancel

5. Choose the appropriate scale from the drop box.

6.	Click on the	DK button. This will activate the Format range window.			range window.
			Format F	Range	×
				(Use 0 to 0 for the whole log)	

Depth

Interval:

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.

to 0

ΟK

Cancel

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	F
Exit	

3. Click on the Resize to track selection. This will activate the Format range window.

Format Range		×
Depth (Use () to 0 for the whole I	og)
Depth Interval: 0	to 0	OK
		Cancel

- 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 **Button**. This will change the annotations over the interval specified in the range window for that annotation layer.

Note: Every type of layer in Power*Log, Power*Core and Power*Curve has a Data Type classification. The default settings for the Annotation layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the Annotation layer is active. You can display different annotation groups on a layer through the Data Group ID's tab

Active Layer Configuration [Annotation]		Active Layer Configuration [Annotation]
		Active Layer Configuration [Annotation] Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo
	DK Cancel Help	OK Cancel Heb

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

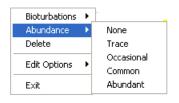
2. Right click anywhere on the Bioturbation track / layer to activate the pop-up menu.

Bioturbations	×
Abundance	×
Delete	
Edit Options	۲
Exit	

3. 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.

Bioturbations	م رب (Bioturbated - barren
Abundance	¢ ∢	Bioturbated - churned
Delete	மர்ட	Bioturbated - moderately
Edit Options	^{سڼس}	Bioturbated - moderately well
Eule Options	-i-	Bioturbated - slightly
Exit	Ù-w	Bioturbated - well

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.

- 6. **Double Click** within an existing rock type interval in the Bioturbation layer with the **Dol 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

1. **Double click** on the **Bioturbation** track / layer to activate the **Bioturbations** window.

Mouse Pointer Method

- 2. Click on the symbol you wish to resize. If done correctly it will indicate with the resize boxes.
- Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends and then Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into

resize cursor ↓.

4. . Release the mouse button and the interval will be resized.

Keypad Method

1. 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.
- 2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
- 3. Hold the CTRL Key down and Click and drag the interval to a new position. Your cursor will turn into a the 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

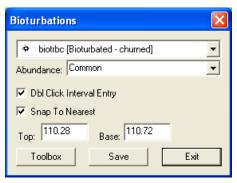
2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.



- 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 Bioturbation Builder window.



- 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 🔣		
Delete these Symbols?		
Yes	No	

4. Click on 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 ((BR)] 🛛 🔀
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Bioturbation Image: Display Layer Name or Curve Scale on Track Image: Display Layer Name or Curve Scale on Track Image: Display Vertical Orientation (Layer Name) Image: Display Vertical Orientation (Layer Name) Image: Display Vertical Orientation (Layer Name) Image: Display Scale Change Line Indicator Image: Display Scales on non-active layers Image: Display Full Logarithmic Scale Image: Display Depth-Axis Grid Image: Display Data-Axis Grid	Data Type: Bioturbation Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Bit Record Layer

This layer allows you to display some of the Bit Record information on the log.

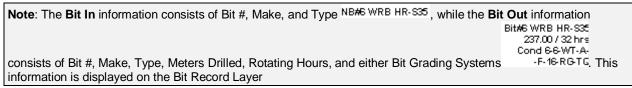
Adding Bit Record Data

Double click on the **Bit Record layer** to activate the Bit Record window shown below. The user can also click on Bit Record, under the Reports menu selection.

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

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

Bit Records and Related Data				
Bit Records Pump Data Drilling Parameters Bit Grading				
Save Und	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		
Туре	M416	Total Flow Area (mm²) 1111.4		
Size	222	Rotating Hours 35		
Serial#	M34256	Average Drill Rate 3.43		
Depth In:	1030	Display Depth In 📔 🛛 In Align right 💌		
Depth Out:	1150	Display Depth Out 📃 Out Align Right 💌		
Drilled:	120.00	Total Rotating Hours 35		
		OK Cancel Help		



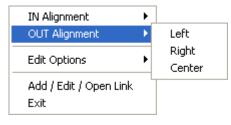
To Change the Display

- 1. Double Click on the Bit Record track / layer to activate the Bit Record data entry window
- 2. Right click at the depth on the Bit Record track / layer where the data to change is to activate the pop out menu. And click on one of the selections.

In Alignment Option – Right click on the Bit Record layer at the In depth of the bit record to change to activate the pop out menu seen above and select In Alignment to activate a pop out menu and select left / right /centre and the display will change accordingly.

IN Alignment	Þ	Left
OUT Alignment	۲	Right
Edit Options	Þ	Center
Add / Edit / Open Link Exit		

Out Alignment Option – Right click on the Bit Record layer at the Out depth of the bit record to change to activate the pop out menu seen above and select Out Alignment to activate a pop out menu and select left / right /centre and the display will change accordingly.



Moving the Bit Record Text Independently without the Right Click Options

- 1. Double Click on the Bit Record track / layer to activate the Bit Record data entry window.
- 2. Hold the CTRL key down on your keypad and then move the mouse to the text data you want to move and then click and drag the information to a new spot on the layer. If done correctly you will see a box outline move with the mouse and the text will be redrawn when you let go of the mouse button and then the CTRL key

<u>Note</u>: Every type of layer in **Power*Log / Core & Curve** has a **Data Type** classification. The default settings for the **Bit Record Data** layer are shown below. To access this window, **click** on the **Dist Configuration button** on the **Toolbar**, when the **Bit Record Data** layer is active.

Active Layer Configuration [Bit Record]			
	Ales Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Bit Record UWI Foreground Color: black Depth Offset: Display Scale Placements Every Start at:		
	OK Cancel Help		

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.

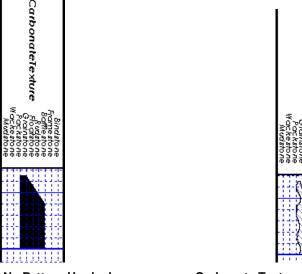
Entire Interval: An entire interval is one that is pertinent to an entire rock unit or bed. An entire interval cannot be added until a bed exists.

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

CarbonateTex

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 in the System Options Display Tab dialogue window. This will also change all the carbonate texture and matrix layers on all logs.

- 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 💌	
	Downward hatch (left to right) at 45 degrees Upward hatch (left to right) at 45 degrees Horizontal and vertical crosshatch	
3.	Then select the Carbonate Texture pattern Crosshatch at 45 degrees from the F pattern list drop box.	ill
	Select the Foreground Color (Line Color) from the Pattern Color: selector button.	
4.	Select the Foreground Color (Line Color) from the Foreground selector Color button.	
5.	Click on the DK button after you have changed your selection.	
6.	You may also have to change the background color of the Carbonate Texture as well. To do this click on t Carbonate Texture layer .	the
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.	

		OK I	_
9.	Click on the		button.

<u>Note</u>: 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.

Adding an Entire Interval

1. **Double click** on the **Carbonate Texture** layer to expand the **Carbonate Texture** track and to activate the **Carbonate Texture Builder** window.

Carbonate Text	ture Builder 🛛 🔀
Save Del	Not Selected
Entire Interval:	💌 to
	Sequence:
Sub-Interval:	v to
	Sequence:
🔽 Snap to closest I	lithology
💌 Dbl Click Interva	l 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 [floatstone] to

188.00 [Floatstone]

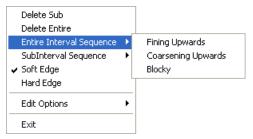
190.20 [rudstone], on the Carbonate Texture track. 190.20 [Rudstone]

3. Release the mouse button and the entire Carbonate Texture 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 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 criteria.



- 5. Repeat Steps 2 4 to add more Carbonate Textures.
- 6. Press the Esc key on the keyboard to exit from the Carbonate Texture Builder window.

<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.

Deleting an Entire 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 interval that you wish to delete to activate the pop-up menu.

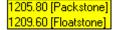


- 3. Click on Delete Entire and the Carbonate Texture will be deleted accordingly.
- 4. Press the Esc key on the keyboard to exit from the Carbonate Texture Builder window.

Adding a Sub-Interval

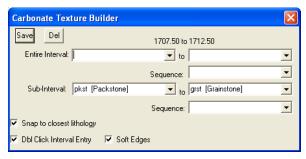
Texture interval.

- 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 Carbonate

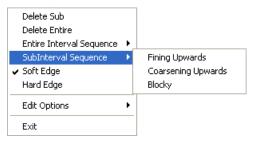


<u>Note</u>: You can drag the pointer to the left or right of the **Grain Size** track to more accurately describe your grain size range.

3. Release the mouse button and the Carbonate Texture sub-interval will be drawn.



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			
Soft Edge			
Hard Edge			
Edit Options	۲		
E×it			
	Delete Entire Entire Interval Sequence SubInterval Sequence Soft Edge Hard Edge Edit Options		

- 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.

Changing the Carbonate Texture Scale

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.

Active Layer Configuration [Carl	onate Texture]	\mathbf{X}
Layer - Display Settings Curve Definitions	Layer Scales Data Group IDs Formation	and Age Display Dip Meter Definitions
Save Undo		
Porosity Grade Scale Percent Layer S Grain Size Scale Carbonate Textr	cale Dip Meter Scale ure Scale	
Left: 10 Right:	D	Depth-Axis Grid
Verbal Settings Grain Size Scales		Style: Full 💌
	v to	Data-Axis Grid
Carbonte Texture Scales		Type: In 🔻
Boundstone	to Clay	Units:
Dip Meter Quality Scale Range		- Linear Cycles
From: To:		Major Minor Increment
		Log. Cycles: 10
		OK Cancel Help

- 3. Select the left and right carbonate texture scales from the Carbonate Texture Scale drop boxes.
- 4. Click on the ______ button and select ______ from the System Message window to exit the Layer Configuration 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.

Active Layer Configuration [Carbonate Texture]		
Layer - Display Settings Curve Definitions Layer Sc	cales Data Group IDs Formation and Age Display Dip Meter Definitions	
Save Undo Name: Carbonate Texture Image: Display Layer Name or Curve Scale on Track Image: Display Layer on Track Image: Display Vertical Orientation (Layer Name) Image: Display Vertical Orientation (Layer Name) Image: Display Vertical Orientation (Layer Name) Image: Display Scale Change Line Indicator Image: Display Scales on non-active layers Image: Display Full Logarithmic Scale Image: Display Depth-Axis Grid Image: Display Data-Axis Grid	Data Type: Carbonate Texture Foreground Color: black Depth Offset: Display Scale Placements Every Start at:	
	OK Cancel Help	

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.

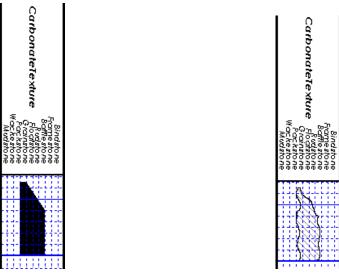
Entire Interval: An entire interval is one that is pertinent to an entire rock unit or bed. An entire interval cannot be added until a bed exists.

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

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.

<u>Note</u>: 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 Builder	×	
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 Edges		

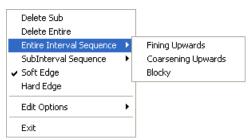
 Click and drag the mouse pointer from a specific Measured Depth and Carbonate Texture, as indicated within the mouse pointer display box, to another Measured Depth and Carbonate Texture, e.g. 1204.00 [floatstone]
 1204.00 [Floatstone]

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 **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.



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 Carbonate

	[1205.80 [Packstone]
Matrix interval.	1209.60 [Floatstone]
main A inite val.	

Texture

<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 Texture Matrix Builder				
Save Del	1653.50 to 1660.00			
Entire Interval:	to	-		
	Sequence:	•		
Sub-Interval:	mdst [Mudstone]	•		
	Sequence:	•		
🔽 Snap to closest lithology				
🔽 Dbl Click Interva	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.

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

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 🔸			
	SubInterval Sequence	۲	
~	Soft Edge		
	Hard Edge		
	Edit Options	۲	
	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.

Changing the Carbonate Texture Matrix Scale

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.

	Active Layer Configuration [Matrix Carbonate Texture]
	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 Depth-Axis Grid
	Left: U Right: 10
	Grain Size Scales
	to Data-Axis Grid Type: In
\langle	Units:
	Dip Meter Quality Scale Range Linear Cycles From: 0 To: 1 Major Minor Increment
	From: 0 To: 1 Major Minor Increment
	Log. Cycles: 10
	OK Cancel Help

- 3. Select the left and right carbonate texture scales from the Carbonate Texture Scale drop boxes.
- 4. Click on the button and select from the System Message window to exit the Layer Configuration 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.

Active Layer Configuration [Matrix Carbonate Texture]	Active Layer Configuration [Matrix Carbonate Texture]
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo Data Type: Carbonate Texture UVI Display Layer Name or Curve Scale on Track Foreground Color: black Image: Display Layer Name or Curve Scale on Track Ø Isplay Vertical Orientation (Layer Name) Display Vertical Orientation (Layer Name) Display Scale Change Line Indicator Display Full Logarithmic Scale Ø Display Date-Axis Grid Every Start at:	Layer - Configuration Imatrix Carbonate Texture] Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Unda Percent Layer Scale Dip Meter Scale Depth-Axis Grid Grain Size Scale Carbonate Texture Scale Depth-Axis Grid Style: Full I Verbal Settings Grain Size Scales to Data-Axis Grid Deta-Axis Grid Grain Size Scales to Imatrix Carbonate Texture Scale Depth-Axis Grid Depth-Axis Grid Dip Meter Quality Scale Range to Imatrix Imatrix Carbonate Internet Imatrix Im
OK Cancel Help	OK Cancel Help

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Casing Layer

This layer allows you to display some of the Casing String information on the log.



Adding Casing Data

- 1. **Double click** on the Casing layer to activate the Casing Strings window shown below. The user can also **click** on **Casing Strings**, 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 **Save** button or press ALT-S and then click on the appropriate button out of the ensuing Shortcut Options window.

Casing St	rings		
Save Ur	ndo New De	el First Prev ? Next	Last
String #	Type	Hole Size (in)	Casing Size (in)
2	Intermediate	▼ 222	177.8
Joint Info: (# of Joints; Le	ength (ft); Size (in); Weight (l	bs/ft))
Run 114 J	oints of 177.8	K-55 LT&C, With a weight (of 34.2 kg/m 🔥
		-	String #
Total Joints	E Landed at	Casing Date Time	Plug Down Date Time
114	1478	Feb 21, 2003 11:45	Feb 22, 2003 06:20
Cementing Details:	Tonne (3.0m Tonnes (22.3	3 HT-40 + 4.0 m3 Now Flust 3) BFV 1400 Scavenger @ 3 m3) BVC 1400 Fill + 11 To 4 % FL-5, Float Held, Scave	1250 kg/m3 + 13.8 nnes (8.6 m3) NSP-1
Remarks:	Casing Job V	Vent Well.	
			V

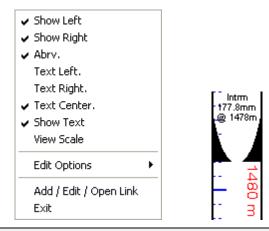
Note: The information entered into the String Type, Casing Size and the depth landed information is the data represented in this track / layer.

To Change the Display

5. Double Click on the Casing track / layer just above the data to activate the Casing Strings data entry window. If

the record is not showing then you want to **click** on the **String #... button** to activate the list of casing strings and select the casing string you want to make changes to.

6. Right click above the string landed depth on the Casing track / layer to activate the pop out menu. And click on one of the selections.



The example above has the Short form and casing shoe indicators at 100%. Along with a Depth layer

Show Left Option – Right click on the layer above the string landed depth with the builder open to activate the pop out menu seen above and select Show left to toggle between showing the left casing shoe symbol on or off.

Show Right Option – **Right click** on the layer above the string landed depth with the builder open to activate the pop out menu seen above and **select Show Right** to toggle between showing the left casing shoe symbol on or off.

Abrv Option – **Right click** on the layer above the string landed depth with the builder open to activate the pop out menu seen above and **select Abrv** to toggle between long and short forms of the Casing Type.

Text Left Option – **Right click** on the layer above the string landed depth with the builder open to activate the pop out menu seen above and **select Text Left** to place the text on the left of the layer.

Text Right Option – **Right click** on the layer above the string landed depth with the builder open to activate the pop out menu seen above and **select Text Right** to place the text on the right of the layer.

Text Centre Option – **Right click** on the layer above the string landed depth with the builder open to activate the pop out menu seen above and **select Text Centre** to place the text on the centre of the layer.

View Scale Option – **Right click** on the layer above the string landed depth with the builder open to activate the pop out menu seen above and **select View Scale** to activate the Casing View Scale window. The width of the track determines the size of the casing shoe symbols and to change the view scales from 100 to something lesser is a

ΟK

necessity most of the time. The user must **Type** in a new scale in the scale field and then **click** on the **button**.



Moving the Casing Text Independently without the Right Click Options

1. Double Click on the Casing track / layer to activate the Casing Strings data entry window.

2. Hold the CTRL key down on your keypad and then move the mouse to the text data you want to move and then click and drag the information to a new spot on the layer. If done correctly you will see a box outline move with the mouse and the text will be redrawn when you let go of the mouse button and then the CTRL key

<u>Note</u>: Every type of layer in **Power*Log / Core & Curve** has a **Data Type** classification. The default settings for the **Casing Data** layer are shown below. To access this window, **click** on the **Layer Configuration button** on the **Toolbar**, when the **Casing Data** layer is active.

The only thing that can be modified is the Casing shoe symbol color which is handled by the foreground color on the Layer Display Setting tab.

Active Layer Configuration [Casing Data]	
Layer - Display Settings Curve Definitions Layer Sc	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo	Data Type: Casing Data
Name: Casing Data	UWI
🔲 Display Layer Name or Curve Scale on Track	Foreground Color: black
 Show Layer on Track Display Vertical Orientation (Layer Name) 	Depth Offset:
 Display Vendal Offendation (Layer Name) Display Backup scales 	Display Scale Placements
Display Scale Change Line Indicator	Every Start at:
Display scales on non-active layers	
 Display Full Logarithmic Scale Display Depth-Axis Grid 	
Display Data-Axis Grid	
	OK Cancel Help

5. **Click** on the **Save button** to Exit and Save the Layer configuration settings.

Core Box Data Layer

This layer displays the Core Box data with the Core Number, Box Number, Top and Base Depth as well as the Rows per box. This is graphically displayed on a layer if it is on your Core log. There are two methods of entry that we keep track of the box and core # data for you so that you will only have to enter the base depths for ascending data entry. Conventional cores will augment the boxes to infinity while the Oil Sands method will change the Core # and Box number after every second box.

How to Enter Core Box Data.

1. Double Click on the Core Box Layer to activate the Core Box Data Entry Window. If the Core Box data window

has data filled in **Click** on the **button or press ALT-N** and then fill in a new record.

Core Box Data		
Save Undo New Del	First Prev ?	Next Last
Core Top: 1220	 Oil Sands 	List
Core Base: 1221.5	C Conventional	I
Box#: 1	🔽 Ascending	Row Details
Core#: 1		
Rows/Box: 2		Exit

- 2. Type in the Top Depth, Base Depth, Box #, Core # and Rows/Box fields. The user can use the TAB key on the keypad to advance through the data entry fields and Shift Key and TAB key simultaneously to go backwards through the data entry fields.
- 3. Click on the **Save** Button to save the record. Then click on the appropriate button when prompted with the Shortcut Options system window.

The Ascending check box when activated will advance the Top Depth with the Base depth value as well as retain and increment the box number and related fields. This will only be implemented when the record is saved

and the	option is chosen. If the CAscending check box is not activated the descending
order will be implied and the	Fop depth will be place in the Base depth field.

- 4. Repeat steps 2-3 for more entries.
- 5. Click on the Exit Button to close the data entry window or click on the X in the upper left corner.

Editing an Core Box Data

1. **Double Click** on the **Core Box Data** layer within box interval that you wish Edit to activate the data entry window with record that you wish to edit.

Core Box D	ata		X
Save Undo	New Del	First Prev	Next Last
Core Top:	1220	💿 Oil Sands	List
Core Base:	1221.5	C Convention	al
Box#:	1	🔽 Ascending	Row Details
Core#:	1		
Rows/Box:	2		Exit

- 2. Or, **click twice** on the **Query button**. This will refresh the window with all the records starting with the first one entered. Then, use the database navigational tools 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 Box Data 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 an Core Box Data

- 1. **Double Click** on the **Core Box Data** layer within box interval that you wish Edit to activate the data entry window with record that you wish to edit.
- 2. Once the selected record is displayed in the **Core Box Data** window, **click** on the **Delete button**.
- 3. Or, **click twice** on the **? Query button.** This will refresh the window with all the records starting with the first one entered. Then, use the database navigational tools 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 Box Data** window. Then, **click** on



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

button.

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<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 **Generic Category** are shown below. To access this window, click on the **Layer Configuration button** on the **Toolbar**, when the **Core Box Data** layer is active.

Active Layer Configuration [Core Box Data	
Layer - Display Settings Curve Definitions Layer Sca Save Undo Name: Core Box Data I Display Layer Name or Curve Scale on Track	ales Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Core Box Data UWI Foreground Color: black
 Show Layer on Track Display Vertical Orientation (Layer Name) Display Backup scales Display Scale Change Line Indicator Display scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid 	Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Core Plug Data Display Layers

These layers display the different data types that are in the Core Plug Report. These values can be entered manually into the report window or can be imported through the Core Plug import utility.

Bulk Density Layer	Saturated Bulk Mass – Water
Grain Density	Saturated Bulk Mass – Oil
K90	Saturated Bulk Mass – Solids
КМах	Saturated Bulk Mass – Totals
κv	Saturated Grain Mass - Oil
KAir	Saturated Grain Mass – Water
Porosity Calculated	Saturated Pore Volume – Oil
Porosity Helium	Saturated Pore Volume – Water
Porosity Measured	Saturated Pore Volume (Fraction) – Oil
Core Sample Code	Saturated Pore Volume (Fraction) – Water

Saturated Bulk Mass – Fluids Saturated Bulk Mass – Water Core Plug Data Display Options

Color

1. The color of the histograms or data points can be changed by **right clicking** on the **Core Data Display layer** and selecting the color option and selecting a color from the color options menu.



Scale

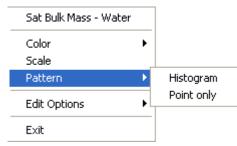
1. The scale of the display can be changed by right clicking on the layer and selecting the scale option to activate the scale window.

Sat Bulk Mass - Wa	iter	Core Dive Data Corela	
Color	•	Core Plug Data Scale	
Scale		Save Undo New Del First Prev ? Next Last	
Pattern	•	from to Left / Bottom	Right / Top
Edit Options	•	Depth Interval Depth Interval Backup Scale: straight shift	0
E×it			

2. Then type in a new left and or right scale or add a new scale interval. This is typical to any curve scale and then Save click on the button.

Pattern

The pattern of the graphical can be switched from histograms to just data points by right clicking on the Core 1. Data Display layer and selecting the Pattern option and selecting a color from the color options menu.



2. Select the pattern type you wish to display the data.

Curve Fill Layer

In Power*Suite, this layer type allows you to create a visual effect with curve data. This layer will allow you to fill an area between 1 curve and a track edge, fill to a value, fill from a value or surround a curve (eg. 1/2" either side of a curve). You also have the ability to set 2 curves and to fill between two curves, fill when one curve is greater or when one curve is lesser than the other curve. The curve fill options can be a solid color, a hatched color, a single lithology or the interpretive lithology.

How to Set (1) One Curve Fill options

Once the layer has been added to your log the user can now utilize the curve fill layer. To set the Curve Fill Options the user must first make the Curve Fill Layer active. To do so the user must click on a track containing the Curve Fill layer and then selecting the given Curve Fill layer from the Layer Selection List field at the far left of the Selection Bar.

- Double click anywhere within the Curve Fill or layer to activate the Curve Fill Options window. An example is 1. shown below.
- Set Main Curve 2. Click on the button. This will activate a list of curves associated with this well.
- 3. Click on the Curve Name you want to use so that it gets listed in the upper portion of the window and then click

Select on the button or double click on the Curve Name you want to use. You will now view the curve Set Main Curve na

	Jermanicuive	• • •
ame below the		button

Curve Fill Options	
Curve fills List ID: 1 New Curve fill	
Set Main Curve Set SecondaryCurve GR GR	
Curve Options Pattern Type PtoP V Log Cycles: 0 Grid Type Linear	Example <u>Main Curve (units)</u> <u>Second Curve (units)</u>
Fill Options Fill Modes - 1 Curve Fill Modes - 1 Curve Fill to right edge Well Path Options Width: 0 Value: 0 Fill Patterns	
Interpreted Lithology	
Foreground color Background color black	2
Solid Rock Fill	Save Cancel

Curve Options Portion of the Window. This information is pertaining to the Main Curve and its Curve attributes.

- 1. Click on the Pattern Type down arrow and select the correct curve pattern for the main curve. The default is PtoP (Point to Point).
- 2. Click on the Grid Type down arrow and select the correct curve grid type for the main curve. The default is Linear.
- 3. If the Grid Type for the Main Curve is Logarithmic then the user must type in the Log Cycles field with the number of Log Cycles that is being used by the Main Curve.

Fill Options Portion of the Window (One Curve)

- 1. Click on the Fill Modes 1 Curve down arrow and select the correct Fill Type for the main curve. As you select the options from the drop down menu an example of the Fill Type will be shown to you in the example on the right of the window.
- 2. If Surround Curve has been selected as the fill type then the Width field is activated and the user must Type in a width indicating how wide to you want the fill to be surrounding the main curve. Example: If (1) one is type into the width field then the fill will be ½" either side of the main curve. (This could be an excellent way to represent the interpretive lithology around the well path curve in Power*Curve.)
- 3. If Fill to a Value, or From a Value has been selected as the fill type then the Value field is activated and the user must Type in a Value indicating what value the curve fill area will fill between the curve and the value.
- 4. Click on the Fill Patterns down arrow and select the desired Fill Pattern for the main curve.

Your Options are **solid foreground** which you could then utilize a Solid Rock Fill or a Foreground Color.

A variety of **hatched (lines)** which would then utilize both foreground and background colors and the user would have to have different colors to differentiate the line and background colors.

Interpretive Lithology would utilize the lithology drawn in the Interpretive Lithology Layer of your log. This fill would not include the accessories and would only fill where the Interpretive Lithology has been entered.

- 1. If Solid Foreground has been selected as the fill pattern then the user must Select the Foreground Color from the drop box or Select a Rock Type from the Solid Rock Type drop box.
- 2. If Hatched Lines (of any kind) has been selected as the fill pattern then the user must Select the Foreground Color from the Foreground color drop box and the Select the Background Color from its drop box.
- 3. If Interpretive Lithology is selected then nothing else has to be done.
- 4. Click on the **Save** button The Curve Fill Options window will close and the changes you have made will be shown on the layer.

How to Set (2) Two Curve Fill options

Once the layer has been added to your log the user can now utilize the curve fill layer.

To set the Curve Fill Options the user must first make the Curve Fill Layer active. To do so the user must **click** on a **track** containing the Curve Fill layer and then selecting the given **Curve Fill** layer from the **Layer Selection List** field at the far <u>left</u> of the **Selection Bar**.

- 1. **Double click** anywhere within the **Curve Fill** or layer to activate the **Curve Fill Options** window. An example is shown on the next page.
- 2. Click on the **Set Main Curve** button. This will activate a list of curves associated with this well.
- 3. Click on the Curve Name you want to use so that it gets listed in the upper portion of the window and then click

on the Select button or double click on the Curve Name you want to use. You will now view the curve

name below the **button**.

- 4. Click on the Set SecondaryCurve button. This will activate a list of curves associated with this well.
- 5. Click on the Curve Name you want to use so that it gets listed in the upper portion of the window and then click on the Select button or double click on the Curve Name you want to use. You will now view the curve

name below the Set SecondaryCurve button.

Curve Options portion of the Window. This information is pertaining to the Main Curve and its Curve attributes.

- 1. Click on the Pattern Type down arrow and select the correct curve pattern for the main curve. The default is PtoP (Point to Point).
- 2. Click on the Grid Type down arrow and select the correct curve grid type for the main curve. The default is Linear.

If the Grid Type for the Main Curve is Logarithmic then the user must type in the Log Cycles field with the number of Log Cycles that is being used by the Main Curve.

Fill Options portion of the Window ([2] Two Curves)

- 1. Click on the Fill Modes 2 Curve down arrow and select the correct Fill Type for the two curves. As you select the options from the drop down menu an example of the Fill Type will be shown to you in the example on the right of the window.
- 2. Click on the Fill Patterns down arrow and select the desired Fill Pattern for the two curves.

Your Options are **solid foreground** which you could then utilize a Solid Rock Fill or a Foreground Color.

A variety of **hatched (lines)** which would then utilize both foreground and background colors and the user would have to have different colors to differentiate the line and background colors.

Interpretive Lithology would utilize the lithology drawn in the Interpretive Lithology Layer of your log. This fill would not include the accessories and would only fill where the Interpretive Lithology has been entered.

Curve Fill Options		
Curve fills List ID: 2	New Curve fill	
Set Main Curve DPHI	Set SecondaryCurve	
Curve Options		Example Main Curve (units)
	Log Cycles: 0	Second Curve (units)
Grid Type Linear		8
Fill Options Fill Modes - 2 Curves	Fill Modes - 1 Curve	
Fill right of main Well Path Options TVD SSL	vidth: 0 Value: 0	
Fill Patterns		Л
Solid Foreground	 Background color	4
yellow 💌	black	2
Solid Rock Fill		Save Cancel
	•	

- If Solid Foreground has been selected as the fill pattern then the user must Select the Foreground Color from the Foreground Color drop box or Select a Rock Type from the Solid Rock Type drop box.
- If Hatched Lines (of any kind) has been selected as the fill pattern then the user must Select the Foreground Color from the drop box and Select the Background Color from its drop box.
- 3. If Interpretive Lithology is selected then nothing else has to be done.
- 4. Click on the **button**. The Curve Fill Options window will close and the changes you have made will be shown on the layer.

How to Add a New Curve Fill ID

Once the layer has been added to your log the user can now utilize the curve fill layer.

To set the Curve Fill Options the user must first make the Curve Fill Layer active. To do so the user must **click** on a **track** containing the Curve Fill layer and then selecting the given **Curve Fill** layer from the **Layer Selection List** field at the far <u>left</u> of the **Selection Bar**.

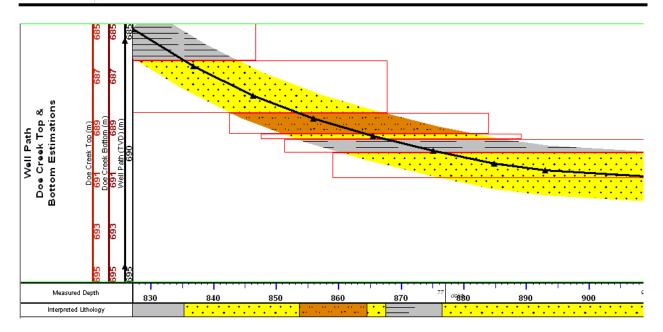
1. **Double click** anywhere within the **Curve Fill or** layer to activate the **Curve Fill Options** window. An example is shown on the next page.

2.	Click on the New Curve fill button. This will activate the Curve Fills window shown below
	Curve Fills
	Save Undo New Del First Prev ? Next Last Curve Fill ID: 4 Set Main Curve Set SecondaryCurve Gamma Ray Drill Rate
3.	Click in the Curve Fill ID field and Type in a New Curve Fill ID Number.
4.	Click on the Set Main Curve button. This will activate a list of curves associated with this well.
5.	Click on the Curve Name you want to use so that it gets listed in the upper portion of the window and then click
	on the Select button or double click on the Curve Name you want to use. You will now view the curve
	name below the
6.	If you would like this to be a curve fill between two curves then click on the Set SecondaryCurve button . This will activate a list of curves associated with this well.
7.	Click on the Curve Name you want to use so that it gets listed in the upper portion of the window and then click
	on the Select button or double click on the Curve Name you want to use. You will now view the curve
	name below the button.
8.	Click on the Save button This will activate a Systems Message and then click on the appropriate button when prompted with the Shortcut Options system window. This will then activate another Window Confirming replacing old Curve Fill ID
	Confirmation × Would you like to change Curve Fills?
	<u>Y</u> es <u>N</u> o
9.	Click on the Yes button.

10. Proceed with How to Set (1) One or (2) Two Curve Fill Layer Options

Curve Fill Layer (Well Path Option on Single Curve)

In **Power*Suite**, this layer type allows you to create a visual effect with curve data. This layer will allow you to fill an area surrounding the well path curve (e.g. 1/2" either side of a curve). It has been designed to take the interpretive lithology drawn and surround the well path curve in the Horizontal (Power*Curve) application. It will also be beneficial when the correlational module has been perfected. The user now has the ability to manipulate the angle of the bedding contacts and the extend of those beds past the areas previously drawn. An example is shown below.



How to Set the Well Path Curve Fill options

You will need the well path curve and the well path curve scale available for the user to be able to fill in the options correctly. The easiest way to populate the well path curve with digits would be by calculating the survey points and updating the well path curve with the digital data. *Without actual survey data generating the well path curve this layer will not work correctly.*

Once the curve fill layer has been added to your log the user can now utilize the curve fill layer. To set the Curve Fill Options the user must first make the Curve Fill Layer active. To do so the user must **click** on a **track** containing the Curve Fill layer and then selecting the given **Curve Fill** layer from the **Layer Selection List** field at the far <u>left</u> of the **Selection Bar**.

1. Double click anywhere within the Curve Fill or layer to activate the Curve Fill Options window.

Set Main Curve

- 2. Click on the button. This will activate a list of curves associated with this well.
- 3. Click on the Well Path curve name to use so that it gets listed in the upper portion of the window and then click

on the **button** or **double click** on the **Well Path** curve that has been generated by the survey

data. You will now view the curve name below the Set Main Curve button.

Curve Fill Options	
Curve fills List ID: 2 New Curve fill	
Set Main Curve Set SecondaryCurve Well Path (SS) Well Path (SS)	Example
Curve Options Pattern Type PtoP Log Cycles: 1 Grid Type Linear	
Fill Options Fill Modes - 2 Curves Fill Modes - 1 Curve Well Path Well Path TVD © SSL Value: 0 Fill Patterns	
Interpreted Lithology Foreground color Background color black black	
Solid Rock Fill	Save Cancel

Curve Options Portion of the Window. This information is pertaining to the Main Curve and its Curve attributes.

- 4. Click on the Pattern Type down arrow and select the correct curve pattern for the main curve. The default is PtoP (Point to Point).
- 5. Click on the Grid Type down arrow and select the correct curve grid type for the main curve. The default is Linear.

Fill Options Portion of the Window (1 Curve)

- 6. Click on the Fill Modes 1 Curve down arrow and select the Well Path from these options.
- 7. **Type** in the **Width field** how wide (in inches) you want the fill to be surrounding the well path curve. Example: If (1) is type into the width field then the fill will be ½" either side of the curve.
- 8. Select between the TVD and SSL scale options. This is applicable to which curve for well path you are filling.
- 9. Click on the Fill Patterns down arrow and select Interpretive Lithology.
- 10. **Click** on the **Save button** in the Curve fill Options window. The window will close and the changes you have made will be reflected on the layer.

Well Path Curve Fill Layer – Bedding Angle Contacts builder

Once the curve fill layer has been customized to be a well path single curve option as described above to get to the builder the user must first make the Curve Fill Layer active. To do so the user must **click** on a **track** containing the Curve Fill layer and then selecting the given **Curve Fill** layer from the **Layer Selection List** field at the far <u>left</u> of the **Selection Bar**.

Single Value Data Entry

1. Double click anywhere within the Curve Fill or layer to activate the Choose Editor window.



2. Click on the Well Path Options button. This will activate Bedding Angle contact window. This window displays the lithology data that has been entered through the Interpretive Lithology builder with the default setting in this window as 0 degrees bedding angle and a plus minus (departure encounter) of 10 meters.

Rock Type	Rock Mo	Bed Angle	Encounter	Departure	Encounter	Departure	Covered Range	
s		0	780	788	-10.00	10.00	770.00 - 798.00	
sh	m gy	0	788	840	-10.00	10.00	778.00 - 850.00	
sltst		0	840	860	-10.00	10.00	830.00 - 870.00	
s		0	860	863	-10.00	10.00	850.00 - 873.00	
sh	m gy	0	863	877	-10.00	10.00	853.00 - 887.00	
35		0	877	915	-10.00	10.00	867.00 - 925.00	6
				_ Chang	e Range			
ngle				From	То			
ncounter [Departure			Encou	unter Departu	re		
Extent	Extent			Exte				

Mouse Pointer method

- 3. To modify a single bed the user can either **click on the bed within the layer**. The bed outline will change from red to blue when selected and will also be highlighted with a grey color in the builder.
- 4. Hold the CTRL Key down on the keypad and click on the corner or end boundary of the bed This will result in an k[¬] or ↔ cursor arrow and click and drag it in a certain direction. You will see the outline of the bed follow your mouse. When released the bed will draw an area surrounding the curve within the boundaries defined by the box with the width as specified in the curve fill option window.

Keypad Method

5. To modify a single bed the user can either **click on the bed within the layer or in the builder**. The bed outline will change from red to blue when selected and will also be highlighted with a grey color in the builder.



- 6. Here the user can change the **type** in a new bedding angle + or to change the angle of dip as well as the extents with a (–) negative number in the Encounter Extent to further the bed to the left or a (+) positive number in the departure field to further the bed to the right.
- 7. Click on the **Update** button. The bed outline will be drawn in an area surrounding the curve within the boundaries defined by the data entered in the fields.

Multiple Value Data Entry

1. Double click anywhere within the Curve Fill or layer to activate the Choose Editor window.

Choose Editor	
Curve Fill Options	Well Path Options
Car	ncel

2. Click on the Well Path Options button. This will activate Bedding Angle contact window. This window displays the lithology data that has been entered through the Interpretive Lithology builder with the default setting in this window as 0 degrees bedding angle and a plus minus (departure encounter) of 10 meters.

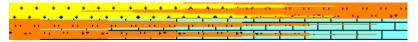
Rock Type	Rock Mo	Bed Angle	Encounter	Departure	Encounter	Departure	Covered Range	^
sltst ss		1	840 860	860 863	-30 -30	30 30	810.00 - 890.00 830.00 - 893.00	
sh ss	m gy	1	863 877	877 915	-30 -30	30 30	833.00 - 907.00 847.00 - 945.00	
Ss Ss		1 1	1739.75 1839.5	1839.5 1891	-30 -30	30 30	1709.75 - 1869.50 1809.50 - 1921.00	
				_ Chang	e Range			
ngle				From 780	To 815	_		
ncounter D Extent)eparture Extent			Encou	······			

 To modify multiple beds at once the user must Type in the range of the beds as defined in the interpretive lithology builder (this must cover the entire interval of the bed) in the From and To fields that users wish to modify.

- Change Ra From	nge To		
780	915	-	
Encounter Extent	Departure Extent	Angle	
-30	30	0	Apply

- 4. The user can change the type in a new bedding angle + or to change the angle of dip as well as the extents with a (–) negative number in the Encounter Extent to further the bed to the left or a (+) positive number in the departure field to further the bed to the right in their appropriate fields.
- 5. Click on the **Apply** button. The beds outlines will be redrawn in an area surrounding the curve within the boundaries defined by the data entered in the fields.

Note. When two beds intersect each other on this layers presentation they will be drawn with an interfingering pattern as shown below.



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 **Curve fill** 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 [Curve Fill]	X
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Curve Fill □ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) □ Display Backup scales □ Display Scale Change Line Indicator □ Display Scales on non-active layers □ Display Full Logarithmic Scale □ Display Depth-Axis Grid	Data Type: Curve Fill UWI Foreground Color: black Image: Curve Fill Depth Offset: Image: Curve Fill Display Scale Placements Image: Curve Fill Every Start at:
	OK Cancel Help

Date Layer / Date Editor

This layer allows the user to enter a date on a layer column of a log. This can be used to identify the date that the well was drilled for a particular section.

Adding a Date

1. Double click on the Date track to activate the Drilling Schedule window shown below:

Drilling Schedule 🔀
Save Undo New Del First Prev ? Next Last
Depth Jare Date: July 1,1997
Display Format: MM/DD/YYYY 🗸 🗸

- 2. Click on the button or press ALT-N to clear the window for the entry of a new record.
- 3. Type the depth that you want your date to appear at into the Depth field. If you wish to edit a depth that has

already been entered, **click** on the **Depth... button** to activate the **Drilling Schedule List** window containing a list of **Depths** and their associated **Dates**.

4. Fill in the Date field.

<u>Note</u>: The format used in the **Date** field, e.g. MMM/DD/YYYY, <u>must</u> conform to the **Date Format** settings in the **System Options** window.

- 5. Select the **Display Format** from the **Display Format** field drop box and the selected format will be highlighted.
- 6. Click on the **Save** button or press ALT-S to save your work and then click on the appropriate button when prompted with the Shortcut Options system window.

Deleting a Date

2.

- 1. Double click on the Date track to activate the Drilling Schedule window.
 - **Click** on the **Depth... button** to activate the Drilling Schedule List window.
- 3. Double click on the Date you wish to delete from the list of depths in the Drilling Schedule List window and the Date and its associated Depth will then be displayed in the Drilling Schedule window.
- 4. Click on the Delete button and the following system message will appear, "Would you like to delete the current record?"
- 5. **Click** on the **button** and the **Date** you selected will be deleted accordingly.
- 6. Press the **Esc** key on the keyboard to exit from the **Drilling Schedule** window.

Editing a Date

- 1. Double click on the Date track to activate the Drilling Schedule window.
- 2. Click on the **Depth...** button to activate the Drilling Schedule List window.
- 3. Double click on the Date you wish to edit from the list of depths in the Drilling Schedule List window and the Date and its associated Depth will then be displayed in the Drilling Schedule window.
- 4. Make any necessary changes to the Date or the Depth values.
- 5. Click on the **Save** button or press ALT-S to save your work and then click on the appropriate button when prompted with the Shortcut Options system window.

<u>Note</u>: Every layer in **Power*Log / Core & Curve** has a **Data Type** classification. The default settings for the **Date** layer are shown below. To access this window, **click** on the **Date Configuration button** on the **Toolbar**, when the **Date** layer is active.

Active Layer Configuration [Date]	
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Date Display Layer Name or Curve Scale on Track Show Layer on Track Display Vetical Orientation (Layer Name) Display Backup scales Display Scale Change Line Indicator Display Scale Change Line Indicator Display Scales on non-active layers Display Sull Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid	Data Type: Drilling Schedule
	OK Cancel Help

Depth Layer

This layer gives the user the ability to display a depth on a track in a log. The user should have at least one Depth layer to identify the depth of a log. The default depth display is Measured Depth (MD). In Power*Log or Power*Core this layer can also represent depth as a Subsea depth value (SSL) or True Vertical Depth value (TVD) is the TVD Module has been purchased. In Power*Curve this layer can also represent depth as a Vertical Section depth value (VS) or Open Hole Depth value (OH) is the VS Module has been purchased.

How to Change the Depth View on a log.

The user must first have surveys entered into the Directional Survey Points report and they must be calculated. For SSL to work you must have entered the KB depth value into the Well Record. For the OH to work you must enter in the Casing information into the Casing report. If this information has not been entered or the modules have not been purchased nothing will work correctly.

Power*Log or Power*Core Selection Bar



Power*Curve Selection Bar

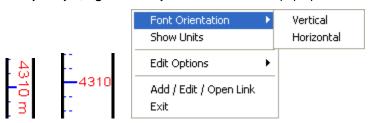
Gamma Ray	👻 🕅 🕅 📾 🕼 🔽	MD	•	1:240	•	•	• 1	•
		MD						
		٧S						
		он						

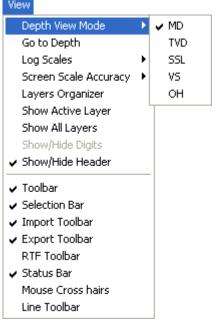
- Click on the down arrow beside the Depth View (MD) and Select a different view mode. If the MD is not grayed out you will get TVD (true vertical depth) or SSL (sub sea level) as a choice in Power*Log or Power*Core. In Power*Curve you will get VS (vertical section depth) or OH (open hole) as a choice.
- or Click on Depth View Mode, under the View menu selection to activate the pop out menu and then click on the desired depth view to display the active log in MD, TVD or SSL for Power*Log and Power*Core. In Power*Curve you will have the option to select from the desired depth view to display the active log in MD, VS or OH.

This will change the logs screen presentation. You will notice that the depth layer shows the depth with either an "m or ft" followed by "(ssl)" in subsea level view, "(tvd)" in true vertical depth view, "(vs)" in vertical section view or "(oh)" in open hole depth view.

Right Click Font Orientation Menu Options on Depth Layer.

1. On the **Depth** layer, **right click** anywhere to activate the pop-up menu.





- 2. Click on Font Orientation and it will activate a pop out menu and then click on Vertical and the Depth font will be displayed up and down on all depth layers on all logs.
- 3. Click on Font Orientation and it will activate a pop out menu and then click on Horizontal and the Depth font will be displayed left to right on all depth layers on all logs

Right Click Show Units Menu Options on Depth Layer.

1. On the Depth layer, right click anywhere to activate the pop-up menu.



2. Click on Show Units and the Depth units in the depth layer illustrated with either an m (meters) or ft (feet) will be turned on or off.

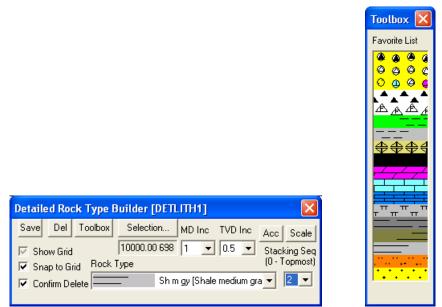
NB. These depth font options can also be manipulated in the System Option located under the Option pull down menu in the Font Tab

Detailed Lithology Layer - Rock Type Builder

In **Power*Curve**, this layer allows you to create a visual representation of the **Interpreted Lithology** associated with the horizontal well path and gives you the ability to show **Lithology** above and below the well path. In the Power*Suite applications you can use this layer to draw and or correlate lithology between wells.

Drawing Detailed Lithology

1. **Double click** on the active **Detailed Lithology** layer to activate the **Detailed Rock Type Builder** window as well as a **Rock Favorites List Toolbox**. The active grid pattern (defaulted to **1** increment) will become apparent in the **Detailed Lithology** layer.



Note: When this layer is first initialized on your log, you will be prompted with a **Measured Depth** interval and a **Scale** for the top and bottom of the layer. This scale defines the upper and lower limits of your **Detailed Lithology** and should correspond to the left and right scales of your well path curves (these curves were added when you first began building your horizontal log). The scale can be changed at any time and new scales may be added. If the scales in the detailed lithology layer are changed the existing lithology will be redrawn with the same x,y co-ordinates as previously drawn but will be represented differently due to the scale change.

When **Detailed Lithology** is your active or working layer, you will have the **True Vertical Depth** (**TVD**) increments visible on the left side of the layer. These are determined by the major/minor linear cycle settings selected in the **Layer Configuration** window.

- 2. 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 **Detailed Lithology** track to activate the pop-up menu. Then select by left clicking once on the desired **Rock Type** from the pop-up menu.
 - You may also select a **Rock Type** from the **Rock Type** field within the **Detailed Rock Type Builder** [**DETLITH**] window, if the desired **Rock Type** is <u>not</u> displayed in the pop-up menu or Toolbox.
 - The user can **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 **Detailed Rock Type Builder [DETLITH]** window.

Detailed Rock Type	Builder [1]	×
Save Del Toolbox Show Grid Shap to Grid Rock Confirm Delete	Selection MD Inc TVD Inc 1010.00 495.0 1 1 1 Type 	Acc Scale Stacking Seq (0 - Topmost)

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

<u>Note</u>: A bed is created by defining upper and lower boundary lines, which are then connected at the ends of their respective lines to form either a rectangle, triangle, square, or polygon containing the selected **Rock Type**.

 Define the upper boundary line of the interval by positioning the mouse pointer on the grid where the line is to be <u>started</u>. Then, click and drag the mouse to the <u>end</u> position of the upper boundary line, release the mouse button, and the upper boundary line of the interval will be drawn accordingly.

<u>Note</u>: If the upper boundary as drawn for the bed is not located in the correct position. The user can right **click** the mouse within the Detailed Lithology Layer to activate the pop-up menu and select **Restart**. The previously drawn bed boundary will be erased enabling the user to start again.

- 4. Define the lower boundary line of the interval by positioning the mouse pointer on the grid where the line is to be <u>started</u>. Then, click and drag the mouse to the <u>end</u> position of the lower boundary line, release the mouse button. The upper and lower boundary lines of the interval will be joined to draw a rectangle, triangle, square, or polygon containing the selected Rock Type: depending on <u>where</u> the upper and lower boundary lines of the interval were placed on the grid within the Detailed Lithology layer.
- 5. You can define the stacking order of this bed, once it's drawn, by clicking once on the bed, selecting the stacking

order number from the Stacking Seq field drop box and clicking on the button or press ALT-S.

Once a rock type is selected the user can draw a rectangle of that lithology on the detailed lithology layer. This method creates a shortcut that automatically draws the top and bottom bed boundaries. To do this the user must **depress and hold** the **Ctrl** key on the keyboard **down**, while **clicking and dragging** the **left** mouse button on the detailed lithology layer. The user will notice the rectangle being drawn on the layer. When the interval you want is defined let the mouse button go and the lithology will be drawn.

<u>Note</u>: When several lithology beds are stacked on top of each other, you can cycle though the stack each time you click your mouse pointer on the stacked beds within the **Detailed Lithology** layer. Each time the left mouse button is clicked, the **Rock Type** field of the **Detailed Rock Type Builder** window will cycle to reflect a successive lithology within the stack.

6. Press the Esc key on the keyboard to exit from the Detailed Rock Type Builder [DETLITH] window.

Overview of the Detailed Rock Type Builder

Detailed Rock Type		
Save Del Toolbox Show Grid Snap to Grid Rock	Selection MD Inc TVD Inc 1010.00 495.0 1 ▼ 1 ▼ Type 1 ▼ 1 ▼ 1 ▼	Acc Scale Stacking Seq (0 · Topmost)
🔽 Confirm Delete 🚺	.*.*. Ss [Sandstone]	- 5-

The **Selection** field identifies the upper left and lower left coordinates of the selected bed, listed as the **Measured Depth (MD)** increment and the **Detailed Lithology Scale** increment.

The **Toolbox** button is a toggle that activates and deactivates the Favorites List Tool box.

Selection.

The **button** activates a **Detailed Lithology List**, which displays every lithology drawn, showing its **Rock Type**, **Stacking Number**, and the upper and lower left side coordinates of the rectangle, triangle, square, or polygon.

You may change the **MD** (**Measured Depth**) or **TVD** (**True Vertical Depth**) increments by selecting them from their respective drop boxes. This can be done to improve the accuracy of the mouse pointer, when using the "**Snap to Grid**" option. The **MD** (**Measured Depth**) increments are positioned <u>horizontally</u> across the log (x-axis), while the **TVD** (**True Vertical Depth**) increments are shown <u>vertically</u> (y-axis).

Show Grid - There are three separate options you may use to display the grid:

No grid pattern - There is no check mark in the Show Grid check box

Grid pattern displayed in front of lithologies - A black check mark is displayed in the Show Grid check box v.

Grid pattern displayed behind lithologies - A gray check mark is displayed in the Show Grid check box will.

<u>Note</u>: Using the **Movable Grid**, in the **Layers Organizer** window, becomes particularly applicable in the **Detailed Lithology** track, when you wish to place the **Well Path** grid pattern on top of the **Detailed Lithology** layer.

<u>Snap to Grid</u> - Activating this check box vill define the mouse pointer's coordinates to the closest available corners on the grid pattern. This helps to provide a common basis for drawing continuous beds and eliminates the need to search for an exact coordinate with the mouse. All beds drawn will conform to the grid pattern, if the **Snap to Grid** check box view is activated.

<u>Confirm Delete</u> - It's a good idea to activate the **Confirm Delete** check box \checkmark . When it is activated, you will be given a system message each time you attempt to delete a record from the log. This can help you to avoid accidental record deletion.

<u>Scale button</u> - Activates the **Detailed Lithology Scale** window, where you may add, delete, or change existing scales for the **Detailed Lithology** layer.

<u>Acc button</u> - When you click on the button, you activate the Detailed Rock Accessory Builder window. This window can be used in the same manner as the Rock Accessory Builder found in the Interpreted Lithology layer.

<u>Stacking Sequence</u> - Once a **Rock Type** is drawn, you have the ability to stack up to **11** beds directly on top of one another. This can be used to fill gaps in previously drawn lithologies or to layer stringers, etc....

Deleting a Detailed Lithology

1. **Double click** anywhere <u>within</u> the Detailed Lithology Layer to activate the **Detailed Rock Type Builder** window.

<u>Note</u>: If the lithology you wish to delete is part of a stack, you <u>must</u> click the left mouse button on the stack, until the lithology you wish to delete is displayed in the **Detailed Rock Type Builder** window.

- Right click anywhere <u>within</u> the Rock Type you wish to delete to activate the pop-up menu shown below:
- 3. Select **Delete** from the pop-up menu and you will receive the following system message, "*Do you really want to DELETE*_[_]?"
- 4. Click on <u>Yes</u> button to confirm the deletion and the selected Lithology will be deleted accordingly.
- 5. Press the Esc key on the keyboard to exit from the Detailed Rock Type Builder [DETLITH] window.

Detailed Lithology Layer - Rock Accessory Builder

The Rock Accessory Builder allows you to add accessories to the Detailed Lithology layer.

Drawing Accessories

List Toolbox.

Thinbed:

Grains:

Fossils:

Matrix:

Cement:

Contact:

Edit Favorites Toolbox

Textures:

Accessories:

- 1. Double click anywhere within the Detailed Lithology layer to activate the Detailed Rock Type Builder.
- 2. Then, **right click** anywhere within the **Detailed Lithology** layer to activate the pop-up menu shown below, or **click** on the **Acc button** in the **Detailed Rock Type Builder** window:

×

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•

•

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•

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Exit

Rock Type

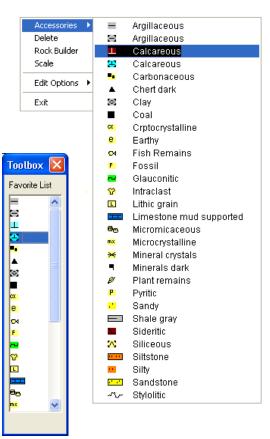


3. Select Acc Builder selection from the pop-up menu to activate the

Detailed Rock Accessory Builder

biot flks [biotite flakes]

Rock Accessory Builder window and the Accessory Favorites



4. Select the Accessory from the Toolbox by clicking on the accessory you wish to use or right click again anywhere within the Detailed Lithology layer to activate another pop-up menu.

<u>Note</u>: The graphical images utilized in the pop-up menu represent specific **Accessories** selected by the user in the **System Options** window (See the **System Options** section.

Rocks	•
Delete	
Restart Acc Builder Scale	
Edit Options	•
Exit	

5. Click on the appropriate Accessory symbol from the pop-up sub-menu and the corresponding field in the Rock Accessory Builder window will automatically be filled in with the selected Accessory. You may also select a Rock Accessory from the Thinbed, Components, Matrix and Cement fields within the Rock Accessory Builder window, if the desired Rock Accessory is not displayed in the Accessory Favorite List Toolbox or the pop-up menu.

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.

6. Click anywhere within an existing Detailed Lithology to insert the desired Accessory/Accessories.

The Toolbox can be activated or deactivated by clicking on the **Toolbox** button within the Rock Accessory Builder Window.

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 will be redrawn at the position.

Deleting a single Thinbed, 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, 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.

Yes

Confirm Multiple Delete 🛛			
Delete these Acce	essories?		
Yes	No		

- 3. Click on the
- button. The accessories that were covered by your drag will be deleted.

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 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 [Detailed Litho	blogy]
	bobgy cales Data Group IDs Formation and Age Display Display Display Scale Placements Every 50 Start at: 0
	OK Cancel Help

Diagenesis Layer

This layer allows you to add or delete **Diagenesis Symbols** in the Power*Core application. There are two types of **Diagenesis** 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 diagenesis. The diagenesis is also restricted to the bed you are drawing in. Also, when the bed is resized or deleted the diagenesis symbol may be also resized or deleted if the diagenesis 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.

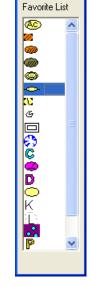
Adding a Diagenesis

<u>Note</u>: All bed restricted description categories, such as **Diagenesis (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 diagenesis, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

1. Double click on the Diagenesis track / layer to activate the Diagenesis Symbol Builder window and toolbox.

The toolbox can be turned on or off by clicking on the **Toolbox** button in the builder.

Diagenesis S	iymbols 🛛 🔀
Diagenesis:	🗢 beye [Birdseye Texture - Keystone Vugs]
Abundance:	Trace
Top: 25.12	Base: 25.18
Edit Favorites	Toolbox Save Exit

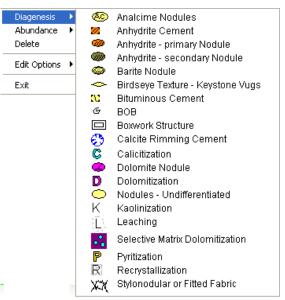


Toolbox 📘

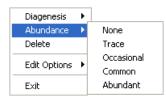
2. Right click anywhere on the Diagenesis track / layer to activate the pop-up menu.



3. **Click** on the **Diagenesis** 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 diagenesis, **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 Diagenesis interval will be drawn accordingly.
- Double Click within an existing rock type interval in the Diagenesis layer with the
 Dbl Click Interval Entry Method activated and the entire interval will be filled in with the attributes that have been entered into the Diagenesis Symbols window.
- 7. Click and drag the mouse on the track / layer close to an existing Diagenesis Symbol (either above or below in

the same column) with the **Snap To Nearest** activated and there will be no spaces between the diagenesis. **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 diagenesis symbols 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 Diagenesis Symbols Builder window.

Resizing an Interval

1. **Double click** on the **Diagenesis** track / layer to activate the **Diagenesis Symbols Builder** window.

Mouse Pointer Method

- 2. Click on the symbol you wish to resize. If done correctly it will indicate with the resize boxes.
- 3. Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends and then Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into

resize cursor \downarrow .

4. . Release the mouse button and the interval will be resized.

Keypad Method

Click once on the Diagenesis 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 Diagenesis track / layer to activate the Diagenesis Symbols Builder window.

- 2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
- 3. Hold the CTRL Key down and Click and drag the interval to a new position. Your cursor will turn into a done correctly. (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 **Diagenesis** track / layer to activate the **Diagenesis Symbols Builder** window.

Diagenesis S	ymbols 🛛 🗙	J
Diagenesis:	🗢 beye [Birdseye Texture - Keystone Vugs] 📃 💌	
Abundance:	Trace	
Тор: 25.12	Base: 25.18 V Dbl Click Interval Entry Method	
Edit Favorites	Toolbox Save Exit	

2. **Right click** anywhere <u>within</u> the interval you wish to delete to activate the pop-up menu.

Sedimentary Structures	۲
Abundance	۲
Delete	
Edit Options	۲
Exit	

- 3. Click on Delete and the Diagenesis interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Diagenesis intervals from the Diagenesis track / layer.
- 5. Press the **Esc** key on the keyboard to exit from the **Diagenesis Symbols Builder** window.

Deleting Multiple Intervals

1. Double click on the Diagenesis track / layer to activate the Diagenesis Symbols Builder window.

Diagenesis S	Symbols	×
Diagenesis:	🗢 beye [Birdseye Texture - Keystone Vugs]	•
Abundance:	Trace	•
Тор: 25.12	Base: 25.18 ✓ Dbl Click Interval Entry Meth ✓ Snap To Nearest	od
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.

Confirm Multiple Delete 🛛	
Delete these Symbols?	
Yes	No
Tes	

- 4. Click on yes button and the Diagenesis Symbols intervals encompassed with your drag will be deleted accordingly.
- 5. Press the **Esc** key on the keyboard to exit from the **Diagenesis Symbols 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 **Diagenesis** layer are shown below. To access this window, click on the **Diagenesis Layer Configuration button** on the **Toolbar**, when the **Diagenesis** layer is active.

Active Layer Configuration [Diagenesis] Layer - Display Settings Curve Definitions Layer Sc.	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Display Layer Name or Curve Scale on Track ✓ Display Layer on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) □ Display Backup scales □ Display Backup scales □ Display Scale Change Line Indicator □ Display scales on non-active layers □ Display Full Logarithmic Scale □ Display Depth-Axis Grid □ Display Data-Axis Grid	Data Type: Diagenesis UWI Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Directional Survey Points Layer

This layer allows you to display some of the Directional Survey Point information on the log.

DS 29.34° AZ 339.6° TVD 273.25 SSL -248.35

Adding Directional Survey Data

1. **Double click** on the **Directional Survey Layer** to activate the Directional Survey Points window shown below. **Or** the user can also **click** on **Directional Survey**, under the **Reports** menu selection. This will activate the

Survey Report then **click** on the **Survey Points** button.

- 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 out of the ensuing Shortcut Options window.

Directional S	urvey Point					×
Save Undo M	New Del First	Prev ? N	lext Last	Calcu	ilate TVD	
Measured Dept	h Drift Angle	Azimuth ^O	TVD		Display De	pth
1493.1	72.3	144.5	1376.21			
+N/-S Distance	+E7-W Distance	Dog Leg Sev	verity √ertical Se	ction	Alignment	
-205.94	146.84	12.36	252.89		right	-
🗖 Misrun						

Note: The Directional Survey Layer has the Survey Point Information that consists of the **Inclination**, **Azimuth**, **TVD Depth** and **Subsea Depth**. The Azimuth can be displayed in either the 0-360 degrees or the Quadrant system. This option is available in the System Options, Display tab under the Options Menu.

To Change the Display

- 7. Double Click on the Directional Survey track / layer to activate the Directional Survey Point data entry window
- 8. **Right click** at the **depth** on the **Directional Survey / layer** where the data to change is to activate the pop out menu. And click on one of the selections.



Align Left Option – Right click on the Directional Survey layer at the depth of the directional survey to change to activate the pop out menu seen above and select Align Left to change the display position of that survey to the left.

Align Right Option – Right click on the Directional Survey layer at the depth of the directional survey to change to activate the pop out menu seen above and select Align Right to change the display position of that survey to the right.

Centre Option – **Right click** on the **Directional Survey layer** at the **depth** of the directional survey to change to activate the pop out menu seen above and **select Centre** to change the display position of that survey to the centre.

Align Left (All) Option – Right click on the Directional Survey layer to activate the pop out menu seen above and select Align Left (All) to change the display positions of all the surveys on the layer to the left.

Align Right (All) Option – Right click on the Directional Survey layer to activate the pop out menu seen above and select Align Right (All) to change the display positions of all the surveys on the layer to the right.

Centre (All) Option – Right click on the Directional Survey layer to activate the pop out menu seen above and select Centre (All) to change the display positions of all the surveys on the layer to the centre.

Show TVD Option - Right click on the Directional Survey layer at the depth of the directional survey to change to activate the pop out menu seen above and select Show TVD to toggle between showing the TVD Depth or not for all the survey points.

Show SSL Option - Right click on the Directional Survey layer at the depth of the directional survey to change to activate the pop out menu seen above and select Show SSL to toggle between showing the SSL Depth or not for all the survey points.

Moving the Directional Survey Text Independently without the Right Click Options

- 1. **Double Click** on the **Directional Survey track / layer** to activate the **Directional Survey Point** data entry window.
- 2. Hold the CTRL key down on your keypad and then move the mouse to the Survey text data you want to move and then click and drag the information to a new spot on the layer. If done correctly you will see a box outline move with the mouse and the text will be redrawn when you let go of the mouse button and then the CTRL key

<u>Note</u>: Every type of layer in **Power*Log / Core & Curve** has a **Data Type** classification. The default settings for the **Directional Survey Data** layer are shown below. To access this window, **click** on the **Directional Survey Data** layer are shown below. To access this window, **click** on the **Directional Survey Data** layer are shown below. To access this window, **click** on the **Directional Survey Data** layer are shown below.

Active Layer Configuration [Directional Su	urvey] 🛛 🗙
Layer - Display Settings Curve Definitions Layer Sc	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Directional Survey □ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) □ Display Backup scales ✓ Display Scale Change Line Indicator □ Display Scale on non-active layers □ Display Full Logarithmic Scale □ Display Depth-Axis Grid □ Display Data-Axis Grid	Data Type: Directional Survey
Active Layer Configuration [Directional St Layer - Display Settings Curve Definitions Layer Sc Save Undo	Urvey]
Annotation Group Annotation Group Generic Category	Directional Survey Detailed Lithology Group Graphics Dip Meter Group
MDT Run No	Visual Range (Energy) Generic Symbols
	OK Cancel Help

L

Energy / Sea Level Change Layer

This layer has the ability graphically represent a change with an arrow either increasing or decreasing in an upward direction.

How to enter a Visual Change interval.

1. Double Click on the Visual Change Layer to activate the Visual Change Data Entry Window. If the Visual

Change window has data filled in **Click** on the **button or press ALT-N** and then fill in a new record.

Visual Rang	e			
Save Top	Undo New Del Base 64.1	First Prev ? Next Last	List	Sea Level Cf
	Jenn	 Decreasing Increasing 	Exit	Change
the desired	interval by clickin	g and dragging the mouse point	er within the Visual	

- 2. Define the desired interval by **clicking and dragging** the mouse pointer within the Visual change layer track. The interval will be drawn accordingly.
- 3. The user can right click on the symbol area and change the arrow direction the line arrow size or delete the arrow altogether.

Increasing	Increasing	Increasing	Increasing	
Decreasing	Decreasing	Decreasing	Decreasing	111
Delete	Delete	Delete	Delete	111
Line Width 🕨	Line Width 🕨	Line Width 🔸 Thin	Line Width 🕨	
Edit Options 🕨	Edit Options 🕨	Edit Options	Edit Options 🕨	{
Exit	E×it	Exit	E×it	\

- 4. The user can also **type** in the **Top Depth**, **Base Depth and select either** C Decreasing Increasing radio buttons. The user can use the **TAB key** on the keypad to advance through the data entry fields and **Shift Key** and **TAB key** simultaneously to go backwards through the data entry fields.
- 5. Click on the Save Button to save the record.
- 6. Repeat steps 2-3 for more entries.
 - Click on the Exit Button to close the data entry window or click on the in the upper left corner.

Resizing an Interval

Mouse pointer Method

7

1. Double click on the Visual Display track / layer to activate the Visual Display Builder window.

Mouse Pointer Method

2. Hold the CTRL Key down and Click on the symbol you wish to resize. If done correctly it will indicate with a grey box outline.

- Still Holding the Ctrl key down on the keypad and move the mouse pointer over the interval ends. Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into resize cursor
- 4. . Release the mouse button and the interval will be resized.

Keypad Method

Hold the CTRL Key down and Click on the symbol you wish to resize to bring it into the builder and then you can change the either the number in the from depth or to depth and / or C Decreasing Increasing and then click on the Save button.

Moving an Interval

- 1. Double click on the Visual Display track / layer to activate the Visual Display Builder window.
- 2. Hold the CTRL Key down and Click on the symbol you wish to resize. If done correctly it will indicate with a grey box outline.
- 3. Hold the CTRL Key down on the keypad and move the mouse pointer over the interval to be moved. Your cursor will turn into a . Click and drag the interval to a new position.

Deleting an Interval

1. Double click on the Visual Display track / layer to activate the Visual Display Builder window.

Visual Rang	je		X
Save Top	Undo New Del Base	First Prev ? Next Last	List
60	<mark>64.1</mark>	C Decreasing <a> Increasing	Exit

2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.



- 3. Click on Delete and the interval will be deleted accordingly.
- 4. The user can also **click** on the **List button** within the builder. This will activate a list of intervals drawn to date. Select from the list by **double clicking on the interval** you wish to delete. This will bring the interval into the builder. **Click** on the **Del button** in the builder and the interval will be deleted accordingly.

		Visual Range List	
		91.1 • 93.9 [Decreasing] Query 56.6 • 53.85 [Decreasing] Select 91.1 • 93.9 [Decreasing] Clear Field 91.1 • 93.9 [Decreasing] Clear Field 119.05 • 123.8 [Decreasing] Cancel	
5.	Click on the	Exit Button to close the data entry window or click on the in the u	ıpper lef

<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 Visual Change is shown below. To access this window, click on the **Layer Configuration button** on the **Toolbar**, when the **Visual Change** layer is active.

Active Layer Configuration [Sea Level Cha	inge]
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Sea Level Change ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) □ Display Backup scales □ Display Scale Change Line Indicator □ Display scales on non-active layers □ Display Full Logarithmic Scale □ Display Depth-Axis Grid □ Display Data-Axis Grid	Data Type: Energy Change
	OK Cancel Help

Formation Tops (Long Name) Layer

This layer allows you to display some of the Formation Top information on the log.

Sephton Evaporitic (TVD: 293.22) (SSL: -268.32)

Adding a Formation

- 1. **Double click** on the Formation Tops (Long Name) layer to activate the Well Formation window shown below. The user can also **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 appropriate button out of the ensuing **Shortcut Options** window.

Well Formation				
Save Undo New Del First Prev Short Long Group: Sephton Group	v ? Next Last K.B. 24.9 Boundary	Ground 21.1 Type: Conf [conformabl	Casing Flange 21.08 e]	
Formation t Tidsdale Member: mts Main Tidsdale Sa	and Seq#: 0	: Type: Long Name Display De	▶ pth: 442	
Era Series mesozoic V lower Period Stage k [cretaceous] V aptiar Age: 140 million years Thickr MD:		23 Alignment: ce Tops MD Prognosis: Sample: 445 Log: 445 Display	TVD 370 378.13 378.13	
Evaluation:		otations 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	
The Main Tidsdale Sandstone was drilled horizontally for 525m and encountered at least a minimum of 290m of good oil pay zones. These zones should and will produce oil at a significant rate. The porosity overall is quite good and there was no indication of water during any of the drilling of the drain section of this well. This is a zone of much importance and should be further evaluated on downhole logs.				
) *Note: Hold CTRL to drag display position				

Note: The information entered into the Formation Long Name, Prognosis TVD, Sample Top Log Top (MD &TVD) can be represented in this track / layer.

To Change the Display

- 1. **Double Click** on the **Formation Top (Long Name) track / layer** just above the data to activate the Well Formation data entry window.
- 2. Right click at the depth on the Formation Top (Long Name) / layer where the data to change is to activate the pop out menu. And click on one of the selections.

Align Left	
Align Right	
Center	
Align Left (All)	
Align Right (All)	
Center (All)	
Edit Options	Þ
Add / Edit / Open Link Exit	

Align Left Option – Right click on the Formation Top (Long Name) layer at the depth of the directional survey to change to activate the pop out menu seen above and select Align Left to change the display position of that Formation Name to the left.

Align Right Option – Right click on the Formation Top (Long Name) layer at the depth of the directional survey to change to activate the pop out menu seen above and select Align Right to change the display position of that Formation Name to the right.

Centre Option – **Right click** on the **Formation Top (Long Name) layer** at the **depth** of the directional survey to change to activate the pop out menu seen above and **select Centre** to change the display position of that Formation Name to the centre.

Align Left (All) Option – Right click on the Formation Top (Long Name) layer to activate the pop out menu seen above and select Align Left (All) to change the display positions of all the surveys on the layer to the left.

Align Right (All) Option – Right click on the Formation Top (Long Name) layer to activate the pop out menu seen above and select Align Right (All) to change the display positions of all the Formation Names on the layer to the right.

Centre (AII) Option – Right click on the Formation Top (Long Name) layer to activate the pop out menu seen above and select Centre (AII) to change the display positions of all the Formation Name on the layer to the centre.

Moving the Formation Name Text Independently without the Right Click Options

- 1. **Double Click** on the **Formation Top (Long Name) track / layer** to activate the Well Formation data entry window.
- 2. Hold the CTRL key down on your keypad and then move the mouse to the Formation text data you want to move and then click and drag the information to a new spot on the layer. If done correctly you will see a box outline move with the mouse and the text will be redrawn when you let go of the mouse button and then the CTRL key

Note: Every type of layer in Power*Log / Core & Curve has a Data Type classification. The default settings for the

Formation Top (Long Name) Data layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the Formation Top (Long Name) Data layer is active.

Active Layer Configuration [Formation T	ops (Long Name)]
Layer - Display Settings Curve Definitions Layer S	cales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Formation Tops (Long Name) 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 Scale Change Line Indicator Display scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid	Data Type: Formation
Active Layer Configuration [Formation T	
Layer - Display Settings Curve Definitions Layer S Save Undo Formation Display Age Display Formatio	ops (Long Name)]

Formations Expanded Layer

This layer allows you to display the Group, Formation and member information on the log.

Adding a Formation

1. **Double click** on the **Formations Expanded** track / layer to activate the **Formation Top** window shown below. The user can also click on **Formation**, under the **Reports** menu selection.

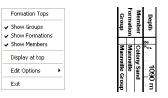
		Course	
2.	Enter in the necessary information and click on the	butt	on

Well Formation				
Short Long Group: Edmontor Formation t Tidsdale		tt Last K.B. 24.9 Boundary Fault Seq#: 0	Type: Long Name Display De	
Era	Series			
mesozoic 🔹	lower	-	. MD	TVD
Period	Stage		Prognosis:	370
k [cretaceous]	aptian	•	Sample: 445	385.93
Age: million years Alignment: left	Thickness MD: 77.50 TVD: 13.28	Calculate Thickness	Log: 445 Display C Prog. • Sm	385.93 Ipl. O Log
Evaluation:		Anno	otations 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
The Main Tidsdale Sandstone was drilled horizontally for 525m and encountered at least a minimum of 290m of good oil pay zones. These zones should and will produce oil at a significant rate. The porosity overall is quite good and there was no indication of water during any of the drilling of the drain section of this well. This is a zone of much importance and should be further evaluated on downhole logs.				
Note: Hold CTRL to drag display p	position			

Note: The information entered into the Group, Formation and Member are represented in this track / layer. The top depths are entered into the Sample Top (MD) field. If the Group and Formation are input identically they will run together as a single Group and Formation.

To Change the Display

1. **Right click** on the **Formations Expanded track / layer** to activate the pop out menu. And click on one of the selections.



The example above has the Groups, Formations and Members portions of the track / layer all turned on. Also the Names are displayed at the top of the interval versus the middle of the interval.

- 2. A second way to change the Formation display is to make the Formation Tops layer active by **clicking** on the **Formations Expanded track** and **selecting** the **Formations Expanded layer** from the layer selection list.
- 3. Click on the Layer Configuration button on the Toolbar or click on Layer Configuration under the Edit menu selection. This will activate the Formation Tops Layer Configuration window.

4. Click on the Formation and Age Display Tab to activate the window shown below. The user can now select which part of the formation they wish to display along the vertical axis of the log and also whether they wish to display the data at the top or middle of the interval.

Active Layer Configuration [Formations Expanded]	Active Layer Configuration [Formations Expanded]
Lager - Display Setting: Curve Definitions Lager Scales Data Group IDs. Formation and Age Display Dip Meter Definitions Save Undd Data Type: Formations Image: Type: Point Display Lager Name or Curve Scale on Track Data Type: Foreground Color: Image: Type: Point Display Lager Name or Curve Scale on Track Point Display Lager Name or Curve Scale on Track Point Display Color: Image: Type: Point Display Dackup codes Display Scale Change Lin Indicator Display Scale Change Lin Indicator Display Scale Change Lin Indicator Display Full Logarithmic Scale Display Date-Asis Grid Display Date-Asis Grid Display Date-Asis Grid Display Date-Asis Grid Display Date-Asis Grid Display Date-Asis Grid Display Date-Asis Grid	Layer - Display Settings: Curve Definitions: Layer Scales: Data Group IDs: Formation and Age Display Dip Meter Definitions: Save Undd Formation Display Age Display Formation Long Name Display on Layer Format 2 Image: State State Formation Formation Formation Short Name Display on Layer Format 1 Image: State State State Display at top Display at top

6. **Click** on the **Save button** to Exit and Save the Layer configuration settings.

Fractures Layer

This layer allows you to add or delete **Fracture Symbols** in the Power*Core application. There are two types of **Fracture** 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 fracture. The fracture is also restricted to the bed you are drawing in. Also, when the bed is resized or deleted the fracture symbol may be also resized or deleted if the fracture 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 Fracture

<u>Note</u>: All bed restricted description categories, such as **Fracture (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 fracture, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

Double click on the Fracture track / layer to activate the Fracture Symbol Builder window and toolbox. The toolbox can be turned on or off by clicking on the Toolbox button in the builder.

orite List

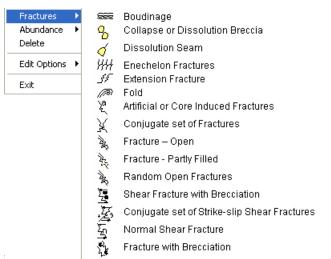
	Too Fav のく イザ
Fracture Symbols Fractures: VM/+ Stylolite - High Amplitude]	
Abundance: Occasional Top: 9 Base: 27 Base: 27 Snap To Nearest	ANTER A
Edit Favorites Toolbox Save Exit	

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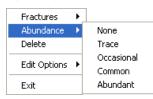
2. Right click anywhere on the Fracture track / layer to activate the pop-up menu.



3. Click on the Fracture 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 Fracture, **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 Fracture interval will be drawn accordingly.
- 6. **Double Click** within an existing rock type interval in the Fracture layer with the **Dol Click Interval Entry** activated and the entire interval will be filled in with the attributes that have been entered into the **Fracture Symbols** window.
- 7. Click and drag the mouse on the track / layer close to an existing Fracture Symbol (either above or below in the same column) with the Snap To Nearest activated and there will be no spaces between the fracture. 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 fracture symbols 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 Fracture Symbols Builder window.

Resizing an Interval

Double click on the Fracture track / layer to activate the Fracture Symbols Builder window. 1

Mouse Pointer Method

- 2. Click on the symbol you wish to resize. If done correctly it will indicate with the resize boxes.
- 3. Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends and then Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into resize cursor 4

4. . Release the mouse button and the interval will be resized.

Keypad Method

1. Click once on the Fracture Symbol 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 top and / or abundance and click on the or bottom of the Lithology interval will take precedent.

Moving an Interval

- 1. Double click on the Fracture track / layer to activate the Fracture Symbols Builder window.
- 2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
- Hold the CTRL Key down and Click and drag the interval to a new position. Your cursor will turn into a 🔱 if done correctly. (The bed-restricted interval will not be allowed to move outside the interval of the lithology it is associated with.)

Deleting a Single Interval

Double click on the Fracture track / layer to activate the Fracture Symbols Builder window. 1

Fracture Symb	ols		×
Fractures:	• styl h amp [Stylolite - H	High Amplitude]	•
Abundance: Occ	asional		-
Тор: 9	Base: 27	Dbl Click Interva	
Edit Favorites	Toolbox	Save Ex	it

2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.



- 3. Click on Delete and the Fracture interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Fracture intervals from the Fracture track / layer.
- 5. Press the **Esc** key on the keyboard to exit from the **Fracture Symbols Builder** window.

Deleting Multiple Intervals

1. **Double click** on the **Fracture** track / layer to activate the **Fracture Symbols Builder** window.

Fracture Symbo	ls	
Fractures:	styl h amp [Stylolite -	High Amplitude]
Abundance: Occ	asional	•
Тор: 9	Base: 27	 Dbl Click Interval Entry Snap To Nearest
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.

Confirm Multiple Delete 🔣		
Delete these S	ymbols?	
Yes	No	

- 4. Click on **Yes** button and the Fracture interval encompassed with your drag will be deleted accordingly.
- 5. Press the Esc key on the keyboard to exit from the Fracture Symbols 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 Fracture layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar , when the Fracture layer is active.

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

Framework Layer

This window allows you to add and delete Framework in the Framework layer on the log.

Framework is defined as a ratio between **Clastic Material** (greater than 1/16mm), and **Primary Void Filler** (less than 1/16mm). **Framework** is usually expressed as a percentage. **Organic Deposits** (**Fossils**) are considered as **Framework** whether growing in place or transported. Questionable **Framework** represents a non-interpretive **Framework**. This is mainly used for **Glacial Tills**, **Cherts** and highly altered **Carbonates**.

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.

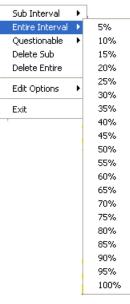
Adding an Entire Interval

Note: All description categories, such as **Framework**, 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 **Framework**, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

1. Double click on the Framework layer to activate the Framework Builder window.

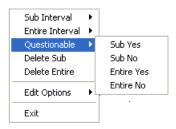
Framework Builder	
Save Del Entire Interval: 2565.00 to 2575.00 Sub-Interval:	☐ (85 ▼ % ☐ (▼ %

2. Right click once anywhere within the interval on the Framework track / layer to activate the pop-up menu.



3. Click on a Framework % from the pop-up menu and it will automatically be drawn within the given interval on the Framework track.

Note: You can right click on the entire interval entered above and then click on **Questionable** and then select **Entire Yes** from the ensuing pop-up menu for a **Questionable** entire **Framework** interval.



- 4. Repeat **Steps 2** and **3** to add more entire **Framework** intervals to the **Framework** track.
- 5. Press the Esc key on the keyboard to exit from the Framework Builder window.

Note: Regardless of the thickness of the entire interval or sub-interval that you have added to the log, **at least one symbol will be drawn within the interval**. Be aware that if you have utilized an entire interval and you are now sub-intervalizing on a small increment, there will be some overlapping of symbols for certain log scales.

Tip: With respect to Entire Interval, the frequency of symbols at any given scale is handled in the Systems Options window selection in the Options pull down menu. 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.

Deleting an Entire Interval

- 1. Double click on the Framework layer to activate the Framework Builder window.
- 2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.



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

Adding a Sub-Interval

- 1. Double click on the Framework layer to activate the Framework Builder window.
- 2. **Right click** once anywhere within the **Framework** track / layer to activate the pop-up menu and select a Framework % from the ensuing pop-up menu.

Sub Interval	Þ	5%
Entire Interval	۲	10%
Questionable	۲	15%
Delete Sub		20%
Delete Entire		25%
	•	30%
Edit Options		35%
Exit		40%
	-	45%
		50%
		55%
		60%
		65%
		70%
		75%
		80%
		85%
		90%
		95%
		100%

3. Click and drag the mouse on the track / layer over the desired subinterval. Or if you just click your mouse on the track / layer a subinterval of whatever was selected in step 2 will be added to the layer / track at the depth you clicked at. The subinterval size is defaulted to the screen scale accuracy setting. The Framework sub-interval will be drawn accordingly.

Note: You can right click on the subinterval entered and then click on **Questionable** and then select **Sub Yes** from the ensuing pop-up menu for a **Questionable Framework** sub-interval.

Note: Regardless of the thickness of the entire interval or sub-interval that you have added to the log, **at least one symbol will be drawn in the middle of the interval**. Be aware that if you have utilized an entire interval and you are now sub-intervalizing on a small increment, there may be some overlapping of symbols for certain log scales.

4. Repeat Steps 2 - 3 to add more Framework sub-intervals to the Framework track.

Note: If you are only using sub-intervals (without the use of any entire intervals), and you wish to have **only one symbol on the log** (for each click), the sub-interval thickness (or increment), should be equal to or less than 0.25m and the symbol frequency (in the **Systems Options** window under **Options** on the application menu bar), should be 1 symbol every 2 meters or greater, for any log scale.

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

Deleting a Sub-Interval

- 1. Double click on the Framework layer to activate the Framework Builder window.
- 2. Right click anywhere within the sub-interval you wish to delete to activate the pop-up menu.



- 3. Click on Delete Sub and the Framework sub-interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Framework sub-intervals.
- 5. Press the Esc key on the keyboard to exit from the Framework Builder window.

Note: 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 default settings for the Framework layer are shown below. To access this window, click on the . Layer Configuration button on the Toolbar, when the Framework layer is active.

Active Layer Configuration [Framework]	×
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Framework ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) Display Backup scales Display Scale Change Line Indicator Display Scale Change Line Indicator Display scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid Display Data-Axis Grid	Data Type: Framework Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Generic Category Layer

This layer allows the user to add any non specific group of data that the application does not generally have within its specific data categories. Either the data groups are too far ranging or company specific. Facies, Depositional Environments would be two data categories that come to mind. The user can define their own entries and use them with either a long ort short form and or color.

Adding Fill Types to the Generic Category (Environment)

1. Double click anywhere within the Environment track to activate the Fills for Environment window.

Fills for 'Envi	ronment' 🛛 🔀
Save Undo Description	New Del First Prev ? Next Last
Short Name	
Back Color	
Fore Color	
	Gradient
Pattern:	•

- 2. Type the environment long name into the Description field.
- 3. **Type** the environment short name into the **Short Name** field.
- 4. Click on the Back Color button and select a color from the palette and then click on the button.

Color 🛛 🛛 🔀
Basic colors:
Custom colors:
Define Custom Colors >>
OK Cancel

- 5. Click on the **Fore Color** button and select a color from the palette and then click on the **OK** button.
- 6. Click on the Gradient Gradient to activate a check mark if you want the gradient option.
- 7. Click on the Pattern field box arrow to select a specific pattern type. Then, click on the Save button.

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Fills for 'Environment'
Save Undo New Del First Prev ? Next Last
Description
Marine 🗾 👻
Short Name
001
Back Color Fore Color
Pattern:

8. The Shortcut Options window will be shown.

Shortcut Options			X
Record saved succe Start New Record	essfully. Choose one of the Move to Next Record	following sh Exit	iortcuts.
Stalt New Recold		EXIL	Lancer

9. Select Exit from the ensuing Shortcut Options window. This will clear the window and the new environment is added.

Editing Generic Category Fill Types

1. Double click anywhere within the Environment track to activate the Fills for Environment window.

Fills for Environment			
	Marina (001)		
Selected:(111.40r	Marine (001)		
🔽 Display Text	Text Options		
🔽 Display Fill	Vertical Alignment: center 👤		
🔽 Display Long	Horizontal Alignment: center 💌		
🔽 Opaque Text	Orientation: h		
Top Depth: 111.4 Base Depth: 113.9			
Dbl Click Interval Entry 🔽 Snap to nearest 🔽			
	Add / Edit Fill Save		

- 2. Click on the fills drop box and select the fill to be edited.
- 3. Click on the Add / Edit Fill button. Your selection will be shown in the Fill Type window.

Fills for 'Envi	roment'		
Save Undo Description Continental Short Name 003 Back Color	New Del First	Prev ? Ne	xxt Last
Fore Color			
Pattern:	✓ Gradient		<i>2</i>

4. Make the necessary changes and click on the **Save** button. The Shortcut Options window will be shown.

Shortcut Options			×
Record saved succe	essfully. Choose one of the	e following she	ortauts.
Start New Record	Move to Next Record	Exit	Cancel

5. Select Exit from the ensuing Shortcut Options window. This will clear the window and allow the user to edit a new record.

Deleting Generic Category Fill Types

1. Double click anywhere within the Environment track to activate the Fills for Environment window.

Fills for Environment					
	Marine (001)				
Selected:(111.40m - 113.90m)					
🔽 Display Text	Text Options				
🔽 Display Fill	Vertical Alignment: Center				
🔽 Display Long	Horizontal Alignment: Center	_			
🔽 Opaque Text	Orientation: h	-			
Top Depth: 11	1.4 Base Depth: 113	8.9			
Dbl Click Interval I	Entry 🔽 👘 Snap to nearest 🖟	Snap to nearest 🔽			
	Add / Edit Fill Si	ave			

- 2. Click on the drop box arrow in the Fills for Environment window and select any of the environments from the resulting choice list that you would like to delete.
- 3. Click on the Add / Edit Fill button, and the Fills for 'Environment' window will be shown.

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	Fills for 'Enviroment'
	Save Undo New Del First Prev ? Next Last Description Continental Short Name 003 Back Color Fore Color V Gradient Pattern:
4.	Click on the button , and the Warning window will be activated.
	Database Data Warning
	WARNING: This could affect other logs that may use this fill! We recomend you ensure this fill is not used in other well before you delete this record Note: To restore a deleted fill, you must remake one with the same long name and short name. You may wish to record these for the record you are about to delete. Are you sure you want to continue to DELETE this record? Yes No Cancel
5.	Click on the button , and the Confirmation window will be activated
	Confirmation X Would you like to delete the current record? Yes No
	Vec

6. Click on the **Ves** button, and the **Environment** will be deleted.

Drawing Fill Types onto the Generic Category Fill Track...

- 1. **Double click** on the **Environment Track** to activate the window.
- 2. Right click on the Environment Track to activate the pop out window, select fills and click on the one of the available fills. Or click on the field box arrow and select one of the available fills that you would like to draw.

		Fills for Environment	
Delete Fills Display Fill Display Text Display Long Form Opaque Text Vertical Align Horizontal Align Vertical Orientation Edit Edit Edit Options Exit	024 004 003 002 001	Marine [001] Selected: (111.40m - 113.90m) Display Text Display Fill Display Fill Display Fill Display Long Display Long Dopaque Text Top Depth: 111.4 Base Depth: 111.4 Base Depth: 113.9 Dbl Click Interval Entry Add / Edit Fill Save	

- 3. Define the desired interval by **clicking and dragging** the mouse pointer within the environment track. The environment interval will be drawn accordingly.
- 4. After selecting the fill type from step 2 the user can also type in the depths in the builder and then **click** on the **Save button**.
- 5. **Double Click** within an existing rock type interval in the Generic Fills layer with the **Dol Click Interval Entry** activated and the entire interval will be filled in with the attributes that have been entered into the Fills window.
- 6. Click and drag the mouse on the track / layer close to an existing Fill (either above or below in the same

column) with the Snap To Nearest activated and there will be no spaces between the fills. **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.

1222.80

Note: Measured Depths can be viewed within the mouse pointer display box 1224.80, situated to the right of the mouse pointer.

Also, while dragging the mouse, the user must start and stay within the confines of the track / layer they are working on. If you stray outside, the interval will start flickering and will not be drawn.

Modifying Fill Types

To modify the display on the track the user can right click on the fill and select one of these editing options.



Display Fill - Displays the color of the fill interval.

Display Text – Displays the name of the fill interval.

Display Long- Displays the long name of the fill interval. If unchecked, displays only the short name of the interval.

Opaque Text – Displays the white frame around the name of the fill interval for a better visibility.

Text Options - Allows the user to determine how they want the text to be aligned and oriented in the environment interval.

Resizing Fill Types

Mouse Pointer Method

- To resize an exiting fills hold your Ctrl Key down on your keypad and move mouse pointer over the end part of the interval until it turns into a double arrow
- 2. Click and drag to a new depth. Remember you cannot overwrite existing intervals.

Keypad Method

- 1. Click on the fill to be resized so that it goes into the builder.
- 2. Type in the new top or base depth into the builder.

3. Click on the Save button

Deleting Fill Types

1. To delete an exiting interval right click on the interval and select delete from the pop out menu.



2. Click on the Close button in the upper right hand corner of the builder. This will close down the Environment 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 Generic Category are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the Generic Category layer is active.

Active Layer Configuration [Generic Symbol]	Active Layer Configuration [Generic Category]
Active Layer Configuration [Generic Symbol] Layer - Display Setting: Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undd Data Stroup IDs Formation and Age Display Dip Meter Definitions Name: Generic Symbol Image: Symbol Ø Display Layer Name or Curve Scale on Track Data Type: Generic Symbol Ø Display Layer Name or Curve Scale on Track Data Type: Generic Symbol Ø Display Dackap cales Dorth Abit Stale Depth Ottract Display Backup cales on noracive layer Display Stale Placements Display Stale Arias Grid Display Data Axis Grid Display Data Axis Grid Every Stat at:	Active Layer Configuration [Generic Category] Layer - Display Settings: Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo
OK Cancel Help	OK Cancel Help

Generic Symbol Layer / Track

This layer allows you to add or delete **a Generic Symbol Category** that has not been offered in Version 10 in the Power*Core application. This will allow the user to create a set of user defined categories and subsequent symbols for a new category that can be represented by these symbols. There are two types of 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 diagenesis. The diagenesis is also restricted to the bed you are drawing in. Also, when the bed is resized or deleted the diagenesis symbol may be also resized or deleted if the diagenesis 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.

How to Add a Generic Symbol 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:

Log Configuration Builder		X
Available Logs		Active Log
Log SYSTEM 💌	Log Config.	Log: Anybodies Oil Sands Log 🔹
 Tracks Dip Meter Data Drilling Progress Energy Change Formation Tops Fractures Framework Generic Category Graphics Hole Dip Meter Data Interpreted Lithology Lithology (2) ✓ C Layers Generic Symbol (BR) 	Add All >>> Show All Hide All Add >>> Delete Show/Hide Move	 Tracks Track Config. N 0.25 Core Samples N 1.08 Grain Size N 0.80 Interpreted Lithology N 0.65 Graphics Core Lined Up Y 0.20 Bioturbation 2 N 1.20 Resistivity N 1.80 Fines Data Y 0.64 Sedimentary Structures Y 0.64 Trace Fossils Y 0.22 Bioturbation Y 1.20 Density Track Width: 0.22 Log Width: 7.98 C Layers Cayer Config. Bioturbation (BR) (Anybody Oil Sands)
	Exit	

- 2. On the left hand side of the Log configuration window scroll down the list of tracks and click on the Generic Symbol track. The track will become highlighted and the Tracks radio button Tracks will become activated.
- 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 Generic Symbol track to the left of the Bioturbation. The track will become highlighted and the Tracks radio button Tracks will become activated.
- 4. In the middle of the Log configuration window **click** on the **button**. This will activate a System Message asking the user "Do you really want to ADD the selected (TRACK) from the available log to the active log?"
- 5. Click on the **Yes** button. This will activate a **Get Name** window allowing the user to name the track.

Get Name 🔀	Get Name
New Track Name: Generic Symbol OK Cancel	New Track Name: Core Observations

6. **Type in** a Track name (Generic Symbol) and then **click** on the **DK button.** The track will be added above the **Bioturbation** Track or to the left on the log, and the Log Configuration Builder window will be shown.

Log Configuration Builder					
- Available Logs	Active Log				
Log SYSTEM 💌	Log Config.	Log: Anybodies Oil Sands	Log 🔽		
Tracks		C Tracks	Track Config.		
Framework	Add All >>>	N 0.25 Core Samples			
Generic Category Generic Symbol Grain Size	Show All	N 1.08 Grain Size N 0.80 Interpreted Lithology N 0.65 Graphics Core Lined L	مل		
Graphics Hole Dip Meter Data Interpreted Lithology	Hide All	Y 0.20 Bioturbation 2 N 1.20 Resistivity N 1.80 Fines Data			
Lithology (%) Lithology Description MDT	Add >>>	Y 0.64 Sedimentary Structure Y 0.64 Rock Accessories Y 0.64 Trace Fossils	es 📃		
Mud Gas Multi Array Data	Delete	Y 0.66 Core Observations Y 0.22 Bioturbation	v		
	Show/Hide	Track Width: 0.66 Log W	/idth: 8.64		
	Move	C Layers	Layer Config.		
C Layers		Core Observations (Anybody C			
Generic Symbol Generic Symbol (BR)		Core Observations (BR) (Anybody Oil Sar		
	Exit				

7. Highlight either the Category Name or the Category Name (BR) so that the Layers Radio button Category is

activated and **click** on the **Delete button** to delete one of these layers. You will probably not want to use both layers on the log.

8. **Click** on the **Exit button**. This will activate the **Log** with the new track and you will then prompted with adding a new Category and symbol for that category.

Generic Symbol Creation	×
Category Name Core Observations	ОК
Long Name	Cancel
Hard Ground	
Short Name HG	

9. Type in the New Category Name you wish to create as well as the Long and Short name for a symbol to be

added to this new category. **Click** on the draw the symbol that you have just named.

button. This will activate the Metafile Editor for you to

le falter - (HG.vmf) ■ Down Object Settings Window Help ■ Dol R □ O C C I ● P R ■ III B R ■ V - V V ■ V		Power Metafile failer [HG.wm] File Edit Vew Draw Copict Settings Window Help D	
	• • • • • • • • • • • • • • • • • • • •		
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· · · · · · · · · · · · · · · · · · ·			
x: 800, y: 60	selection: none size: 0 by 0	Ready x: 500, y	: -40 selection: text size: 440 by 280

10. **Draw** your **symbol**. Please reference the Metafile Options selection under the Edit pull down menu to review how to draw you symbol. **Click** on the **button** when you are finished. You have now added 1 symbol to the

how to draw you symbol. **Click** on the **button** when you are finished. You have now added 1 symbol to the new symbol category.

11. If you would like to add more symbols to the category you will now have to **click** on the **Edit Menu** selection and <u>select Metafile options</u> and then **highlight the category** you have just added and then **select** the

Add New Symbol button to add more symbols to your category.

Edit	Metafile Options	
Undo Move short Symbol Redo Move short Symbol	Category Symbol	
Log Well Print Sections Log Configuration Track Configuration Layer Configuration	BBBB breccia cement clasts Core Observ dddd diagenesis flags geotecl fractures	
Metafile Options	Fred geo perm	
Delete Generic Groups Generic Group Sorting	Rename Symbol Edit	
Core / Sample Header Log Layer Annotations Track Resize Mode	Add New Symbol Refresh Symbols Delete User Defined Symbol	Cancel OK

Drawing a Generic Symbol

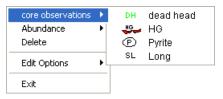
<u>Note</u>: All bed restricted description categories, such as **Generic Symbol (BR)**, are associated with a **Rock Type** and must have a **Rock Type** in order to be saved to the database. Therefore, you cannot add a diagenesis, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

1. Double click on the Generic Symbol track / layer to activate the Generic Symbol Builder window and

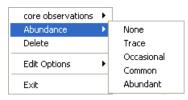
toolbox. The toolbox can be turned on or off by clicking on the **Toolbox** button in the builder.

core observations	Toolbox X Favorite List DH B SL
Symbol: Use hardground [hg] Abundance: Top: 57.45 Base: 58.1 Dbl Click Interval Entry Method Snap To Nearest	
Edit Favorites Toolbox Save Exit	

- 2. Right click anywhere on the Generic Symbol track / layer to activate the pop-up menu.
 - core observations + Abundance + Delete + Edit Options + Exit
- 3. Click on the Generic Symbol (Core Observations) 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 abundance is required, **right click** on the existing diagenesis, **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 Diagenesis interval will be drawn accordingly.
- Double Click within an existing rock type interval in the Generic Symbol layer with the
 Dbl Click Interval Entry Method activated and the entire interval will be filled in with the attributes that have been entered into the Generic Symbol window.

7. Click and drag the mouse on the track / layer close to an existing Generic Symbol (either above or below in the

same column) with the Snap To Nearest activated and there will be no spaces between the diagenesis. **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 Generic Symbol 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 Generic Symbol Builder window.

Resizing an Interval

1. **Double click** on the **Generic Symbol** track / layer to activate the **Generic Symbol Builder** window.

Mouse Pointer Method

- 2. Click on the Symbol you wish to resize. If done correctly it will indicate with the resize boxes.
- Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends and then Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into resize cursor
- 4. . Release the mouse button and the interval will be resized.

Keypad Method

1. Click once on the Generic 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 Generic Symbol track / layer to activate the Generic Symbol Builder window.
- 2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
- 3. Hold the CTRL Key down and Click and drag the interval to a new position. Your cursor will turn into a 🛟 if done correctly. (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 Generic Symbol track / layer to activate the Generic Symbol Builder window.

core observat	ions		×
Symbol: 😈	🖕 hardground [hg]		•
Abundance:			
Top: 57.45	Base: 58.1	Snap To New	erval Entry Method arest
Edit Favorites	Toolbox	Save	Exit

2. **Right click** anywhere <u>within</u> the interval you wish to delete to activate the pop-up menu.

core observations	×
Abundance	۲
Delete	
Edit Options	۲
Exit	

- 3. **Click** on **Delete** and the interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Generic Symbol intervals from the Generic Symbol track / layer.
- 5. Press the Esc key on the keyboard to exit from the Generic Symbol Builder window.

Deleting Multiple Intervals

1. Double click on the Generic Symbol track / layer to activate the Generic Symbol Builder window.

core observ	ations		×
Symbol:	바라 hardground [hg]		•
Abundance:	58.1	Dbl Click Inte	rval Entry Method
Top: 57.45	Base: 08.1	🔽 Snap To Nea	irest
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.



- 4. Click on <u>Yes</u> button and the Generic Symbol intervals encompassed with your drag will be deleted accordingly.
- 5. Press the Esc key on the keyboard to exit from the Generic Symbol 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 Generic Symbol layer are shown below. To access this window, click on the Layer
Configuration button on the Toolbar, when the Generic Symbol layer is active.

Active Layer Configuration [Generic Symbol]	Active Layer Configuration [Core Observations]
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions	Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Data Typer. Generic Symbol Image: Generic Symbol Name: Generic Symbol Givin Image: Generic Symbol Image: Gene: Generic Symbol Image: Gene: Gener	Save Unde Armotation Group Directional Survey Detailed Lithology Group
Collaplay Vetical Clorentation (Layer Name) Collaplay Scale Change Line Indicator Display Scale Change Line Indicator Display Scale Change Line Indicator Display Scale Scale Scale	Genetic Estegory
☐ Display Depth-Axis Grid ☐ Display Data-Axis Grid	
OK Cancel Help	OK Cancel Help

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.

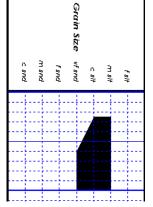
Definitions of an Entire Interval and a Sub-interval will help you to visualize how the system handles data on an interval basis.

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.

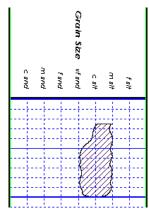
Sub-interval: A sub-interval can be of any thickness (less than the entire rock unit or bed) and can rest within an entire interval or can stand alone as a sub-interval without being part of an entire interval. You can have as many sub-intervals as you wish. If you enter a sub-interval equal to the rock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

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 to 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

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		Grain Size Scale:	Wentworth	•		
			Amstrat Canstrat			04
3.	Then select the corresponding		Wentworth		from the list drop box. Click on the	OK
	button after you have changed	l your select	ion.		·	

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 Forizontal hatch Vertical hatch
3.	Then select the grain size pattern
4.	Select the Foreground Color (Line Color) from the Pattern Color: selector button.
5.	Click on the 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.
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 button.

Adding an Entire Interval

<u>Note</u>: 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 Sub-Interval: Size / Sequence:	Grain ▼ c slt [coarse silt] ▼ Grain ▼	to vf snd [very fine sand]
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 mouse pointer display box, to another Measured Depth and Grain Size, , e.g. 1209.60 [c snd] to 1204.00 [m 1209.60 [c snd]]

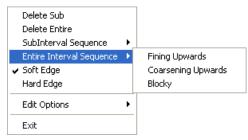
snd], on the Grain Size track 1204.00 [m snd]

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

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.



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

<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.

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.
- 2. On the **Grain Size** layer, **right click** anywhere <u>within</u> the interval that you wish to delete to activate the pop-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 in green accordingly.

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

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.

Delete Sub		
Delete Entire	-	
SubInterval Sequence	•	Fining Upwards
Entire Interval Sequence	×	Coarsening Upwards
🖌 Soft Edge		Blocky
Hard Edge		
Edit Options	F	
Exit		

- 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 (green interval) that you wish to delete to activate the pop-up menu shown below:



- 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	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):

Changing the Grain Size Scale

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.

Active Layer Configuration [Grain Size]	
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age D Save Undo	isplay Dip Meter Definitions
Porosity Grade Scale Percent Layer Scale Dip Meter Scale Grain Size Scale Carbonate Texture Scale Left: 0.03125 Right: 2 Verbal Settings	Depth-Axis Grid
Grain Size Scales Medium Silt ▼ to Very Coarse Sand ▼ Carbonte Texture Scales	Style: Full Bata-Axis Grid Type: In
Dip Meter Quality Scale Range From: 0 To: 1	Units: Linear Cycles Major Minor Increment
	Log. Cycles: 6
ОК	Cancel Help

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

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Active Layer Configuration [Grain Size]	
	ales Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Grain Size UWI Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
✓ Display Data-Axis Grid	OK Cancel Help

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.

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

LITIONOUSY FIONE	check box 🖳	is not activated.	lo do so, click or	n System Options	s under the (Options menu
				-i '		•

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

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

This can only be represented with the Lithology Profile deactivated Lithology Profile 🗔 in the System Options Display Tab dialogue window. This will also change all the grain size and matrix layers on all logs.

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

2.	2. Click on the Display Tab	
	Grain Size Fill Pattern	
		•
	Horizonta	
	Vertical h.	tch I hatch (left to right) at 45 degrees
3.		atch (left to right) at 45 degrees from the Fill pattern list drop box.
4.	4. Select the Foreground Color (Line Color) from the ${\mathsf P}$	attern Color: selector button.
5.	5. Click on the OK button after you have c	nanged your selection.
6.	You may also have to change the background color layer.	of the Grain size as well. To do this click on the Grain Size
7.	 Click on the Layer configuration selection under the configuration tab dialogue window. 	e Edit pull down menu. This will activate the Layer
8.		drop box and select (in this case a
	background color) for your grain size.	
9.	D. Click on the OK button.	

How to Change the Grain Matrix 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

		Grain Size Scale:	Wentworth	•		
2	Then calent the corresponding		Amstrat Canstrat Wentworth		from the list drap hay Click on the	OK
з.	Then select the corresponding button after you have changed				from the list drop box. Click on the	

Adding an Entire Interval

<u>Note</u>: 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.

- 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 shown below:

Grain Size Matrix Builder		\mathbf{X}
Save Del Size / Sequence:	Grain 💌	
Entire Interval: 1452.50 to 1460.00	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 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]

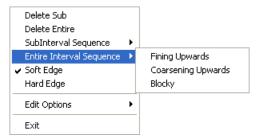
snd], on the Grain Size track 1209.00 [f snd]

4. Release the mouse button and the entire Grain Size Matrix interval will be drawn in purple accordingly.

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.

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 grain size matrix appearance will be redrawn to reflect the newly selected criteria.



6. Repeat Steps 2 - 4 to add more Grain Size 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 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 within the interval that you wish to delete to activate the pop-up menu.



- 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 Matrix [1204.00 [vf snd]]

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 in green accordingly.

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

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	Þ	Fining Upwards
Entire Interval Sequence ✓ Soft Edge	۲	Coarsening Upwards Blocky
Hard Edge Edit Options	_	
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:

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

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

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

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

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	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

Changing the Grain Size Matrix Scale

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.

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: [0.03125 Right: 2 Verbal Settings Grain Size Scales Medium Silt to Very Coarse Sand Data Style: Full Data vis Grid Type: In Units: Linear Cycles Major Minor Increment Log. Cycles: 6	Active Layer Configuration [Matrix Grain Size]	×
Porosity Grade Scale Percent Layer Scale Dip Meter Scale Grain Size Scale Carbonate Texture Scale Left: 0.03125 Right 2 Verbal Settings Grain Size Scales Medium Silt vo Very Coarse Sand v Data vis Grid Carbonte Texture Scales Dip Meter Quality Scale Range From: To: To:	Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Di	splay Dip Meter Definitions
Grain Size Scale Carbonate Texture Scale Left: 0.03125 Right: 2 Verbal Settings Grain Size Scales Medium Silt Carbonte Texture Scales Type: In Dip Meter Quality Scale Range From: To: To: To: Depth-Axis Grid Style: Full Depth-Axis Grid Style: Full Units: Linear Cycles Major Minor Increment	Save Undo	
Verbal Settings Style: Full Grain Size Scales Medium Silt to Very Coarse Sand Medium Silt to Very Coarse Sand Data Axis Grid Carbonte Texture Scales Type: In In Dip Meter Quality Scale Range Tip: Linear Cycles From: To: To: Interement	Grain Size Scale Carbonate Texture Scale	- Depth-Axis Grid
Carbonte Texture Scales Type: In Image: Top Meter Quality Scale Range Units: Image: Linear Cycles From: To: Image: Top Meter Quality Scale Range	Verbal Settings	Style: Full
Dip Meter Quality Scale Range From: To: Units: Linear Cycles Major Minor Increment		
From: To: Major Minor Increment		
Log. Cycles: 6		-
Log. Cycles: 6		
		Log. Cycles: 6
OK Cancel Help		Coursed L. Hole

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

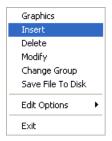
Active Layer Configuration [Matrix Grain S	ize] 🛛 🔀
Layer - Display Settings Curve Definitions Layer Scal Save Undo Name: Grain Size Matrix	Ize Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Grain Size Matrix UWI Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Graphics Layer

This layer allows you to add or delete graphics in our Power*Log, Power*Core and Power*Curve applications. These graphics can be sized, resized and locked with respect to depth (top and bottom) at any log or print scale.

Adding a Graphic or Picture to a Log

1. **Right click** on the **Graphics** track / layer at the depth where you want the top of the picture. This will activate the pop-up menu. The user can also **double click on the Graphics track** and proceed to step 3.



2. Click on Insert selection to activate the Open Picture File window shown below.

Open Picture File	? 🛛		
Look in: 🗁 Graphics	- 🔁 🖆 🔳		
9075-91.jpg Ang Ss.jpg Box 6 & 7.JPG core 1 box 1 (Is mnr sh at top).jpg core 1 box 2 (sh mnr Is at mid).jpg core 1 box 3 (sh and Is).jpg	 core 1 box 4 (sh).jpg core 1.bmp core 2 box 1 (pred ls mnr sh).jpg core 2 box 2 (pred sh tr ls).jpg core 2 box 3 (pred sh 30 ls strgs).jpg core 2 box 4 (pred sh 40 ls strgs).jpg 		
	>		
File name: core 1 box 1 (Is mnr sh at top).jpg Open			
Files of type: Picture Files (*.bmp;*.dib;,*emf;*.gif;*.ico;*.jpg_ Cancel			

3. Navigate through the hard drive folders, or other drives and locate the picture file you want to insert by double

clicking on the filename or by highlighting the filename and click on the **Den** button. This will activate the Set Graphics Options window.

Note: Power*Suite is able to utilize most windows compatible picture or graphic files.

Depth: (Top / Left) 209	Base Depth: (Bottom / Right % @ current so 228.6 1.00
Remark	🔽 Lock Apspect F
Core 1	
Graphic Properties core 1 box 1 (Is mnr sh at	top).jpg Height: 6.64"
Size: 15523 bytes	Width: 1.08"

Depth field has been filled in with the depth that the mouse was right clicked at. This depth can be modified at any time.

Base Depth field defaults to the base depth of the selected picture or graphics file at a Scale % of 100%. The user can modify the Base Depth to change the Scale %.

<u>% @ Current Scale</u> display defaults to 100% of the original pictures' size. This Scale % is modified when the base depth of the picture is modified.

<u>Remark</u> field can be filled in with any comment you wish to view with the picture. This comment will move with the scale modifications made in Base Depth fields.

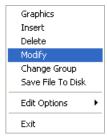
Lock Aspect Ratio check box defaults to checked. The Lock Aspect check box defaults when checked does not allow any distortion of the pictures width. If the picture is smaller or larger than the track width it will display undistorted and will either be smaller than the track width or larger than the track width. If the locked aspect is unchecked then the picture will distort to allow the left and right margins to fill in the entire track width.

Graphic Properties represents the size of the file and the actual screen size in inches.

- 4. Change, fill in or modify the above Graphic Options windows fields to your specifications then **click** on the **button**.
- 5. Repeat Steps 1 4 to add more graphics to the track / layer.

Modifying a Picture or Graphic

1. **Right click** on the **Graphics** or picture that you wish to modify. This will activate the pop-up menu. Or double click on the picture and proceed to step 3.



2. Click on Modify selection to activate the Set Graphics Options window.

Set Graphics Options		×
Depth: (Top / Left) 209	Base Depth: (Bottom / Right % @ current scale 228.6 1.00	
Remark Core 1	V Lock Apspect Ratio	
Graphic Properties	top).jpg Height: 6.64"	
Size: 15523 bytes	Width: 1.08"	
	Cancel Save	

Depth field has been filled in with the depth that the mouse was right clicked at. This depth can be modified at any time.

Base Depth field defaults to the base depth of the selected picture or graphics file at a Scale % of 100%. The user can modify the Base Depth. This change will reflect in the Scale %.

<u>Remark</u> field can be filled in with any comment you wish to view with the picture. This comment will move with the scale modifications made in either the Scale % or Base Depth fields.

Lock Aspect Ratio check box defaults to checked. The **Lock Aspect Ratio** check box does not allow any distortion of the pictures width. If the picture is smaller or larger than the track width it will display undistorted and will either be smaller than the track width or larger than the track width. If the locked aspect is unchecked then the picture will distort to allow the left and right margins to fill in the entire track width.

<u>Graphic Properties</u> represents the size of the file and the actual screen size in inches.

- Change, fill in or modify the above Graphic Options window fields to your specifications then click on the button.
- 4. Repeat **Steps 1 3** to modify more graphics on the track / layer.

Moving a Graphic

The user has the ability to move a picture around within the confines of the layer if the Lock Aspect Ratio check box \checkmark has been activated. Otherwise the picture will take up the entire width of the track and there would be no need to move the picture.

- 1. Make the Graphics layer active by clicking on the track that holds the graphics layer and selecting the graphics layer from the layer selection pull down menu in the selection bar.
- 2. Click on the graphic and drag left or right (Power*Log / Core) or up or down (Power*Curve) and release the mouse button the picture will be redrawn at the new position.

Note: The measure depth relationship of the graphic will not be adjusted in this manner. Just the position with respect to the layer/track edges can be adjusted. If you wish to change the top depth of the graphic you must change it in the builder itself.

Changing a Group

1. Right click on the Graphics track. This will activate the pop-up menu.

	Graphics	
	Insert	
	Delete	
	Modify	
	Change Group	
_	Save File To Disk	
	Edit Options	۲
	Exit	

2. Click on Change Group to activate the Graphics Groups window.

Graphics Group	
Choose or Add Graphics Group ID	
	•
Cancel	(OK)

3. Click on the drop down arrow and choose an existing group of graphics that you want to be shown on the track. Then click on the **DK** button.

Note: The user can also add a new graphics group by typing a new graphics group id and clicking on the UK button. The track will become blank and the user can insert new pictures that will belong to the graphics group that has just been created.

Deleting a Picture or Graphic

1. Right click on the Graphics or picture that you wish to delete. This will activate a pop-up menu.

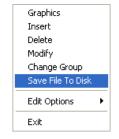


2. Click on Delete selection to delete the Graphics / Picture. This will activate a message window asking the user "Are you sure you want to delete this graphic?"



Saving an Existing Graphic or Picture to a file.

1. Right click on the Graphics track / layer on the picture you wish to save. This will activate the pop-up menu.



2. Click on Save File to Disk selection to activate the Picture File Name window shown below.

Picture File	Name	?	×
Save in: 🗀	Graphics 💽 🗲 🔁	📸 🎫	
photos			
File name:	core photo 5	Save	
Save as type:	Picture Files (*.bmp;*.dib;.*emf;*.gif;*.ico;*.jpg	Cancel]

3. Navigate through the hard drive folders, or other drives and give the picture a file name so that you can find it later to open with another application **click** on the **Save button**. This will activate the **Set Graphics**

Options window.

Note: Every type of layer in Power*Log, Power*Core and Power*Curve has a Data Type classification. The default settings for the Graphics are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the Graphics layer is active.

Active Layer Configuration [Graphics]		Active Layer Configuration [Core In Boxes]
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age 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: Graphics	Save Undo
Name: Graphics Display Layer Name or Curve Scale on Track	UWI Foreground Color: black	Annotation Group Directional Survey Detailed Lithology Group
🔽 Show Layer on Track	Depth Offset	Generic Category Graphics Dip Meter Group
 Display Vertical Orientation (Layer Name) Display Backup scales 	Display Scale Placements	
Display Scale Change Line Indicator Display scales on non-active layers	Every Start at:	MDT Run No Visual Range (Energy) Generic Symbols
Display Full Logarithmic Scale Display Depth-Axis Grid		
🔲 Display Data-Axis Grid		
	OK Cancel Help	OK Cancel Help

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		Interbeds	Accessor
1644	to 1653.5	***** *******************************	cg [sand cg]		-
Confirm Delete	Sample Quality:	_	No Data Descript	ion:	1
Snap to Lithology	Base Contact:	Glossifungites			

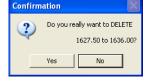
Save Button The user can enter the depths into the two depth fields with either a rock type or no data fields filled in

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.



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 Syste	em Options F	Favorites Tab. The user would go into the
Rock Favorites		ov l	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**

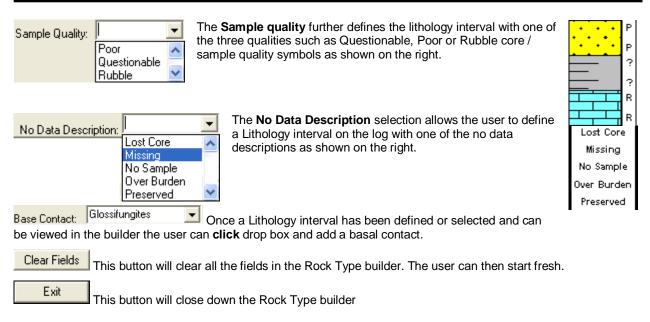
on **Interbeds** button to activate the Interbeds builder.

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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]	_ _	he from and to fields ar
------	-----------	-----------------	------------	--------------------------

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.



Drafting an Interpreted Lithology Interval

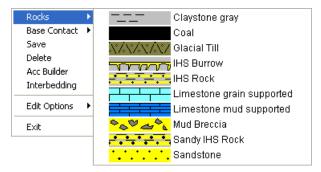
1. **Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window as well as your Favorites List Toolbox.

Rock Type Builder					
Save Del 99.9	to 109.36	Rock Type	brec [mud brecci	Interbeds a]	
Confirm Delete	Sample Quality: Base Contact:	Gradational	No Data Descri	ption:	•
Edit Favorites Toolbo	×				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.

444

- 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.



Note: The graphical images utilized in the pop-up menu represent specific **Rock Types** that can be edited by clicking on the **Edit Favorites** 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.

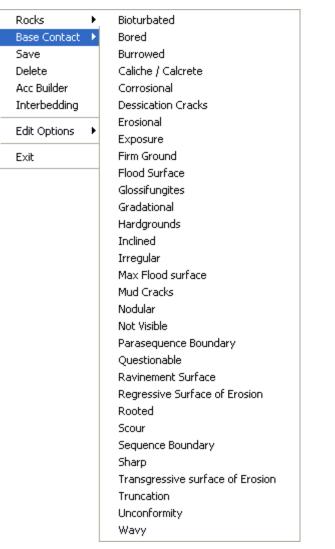
4. **Click and drag** up or down within a specific track to define the lithology interval. **Or**, If there is a rock type defined above and below (within 100 meters) and you want to fill in the interval simply **double click** in the interval and it will fill in with the No data or Rock type selected.

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.

Base Contacts

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.



7. Press the **Esc** key on the keyboard to exit from the **Rock Type Builder** window. The basal contacts will be displayed on the interpreted lithology layer, the grain size and carbonate texture layers, as well at the bedding contacts layer.

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

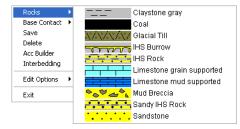
Drafting an Interpreted Lithology Interval with Interbedding.

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

Rock Type Builder		
Save Del	Rock Type Interbeds	Accessory
99.9 to 109.36	💊 🖉 🚄 🌜 md brec (mud breccia)	•
🔽 Confirm Delete 💦 Sample Quality:	No Data Description:	•
Snap to Lithology Base Contact:	Gradational	-
Edit Favorites Toolbox		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.



- 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. 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.
- 5. 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 <u>literbeds</u> **button** in the Rock Type Builder. This will activate the Interbed window also shown below.

	Interbedding	\mathbf{X}
	Accessory Rock Type	
	Grain Size: vc snd [very coarse sand]	-
	Coarsening Upwards 🔽 Finning Upwards 🗖 Carbonate Texture: 💽 💽 to Coarsening Upwards 🔽 Finning Upwards 🗖	•
	Secondary Lithology - [Interbed]	
Rocks 🕨	Grain Size: vf snd [very fine sand] vf snd [fine sand]	Ī
Base Contact 🔸 Save Delete Acc Builder	Carbonate Texture: to Top Interbed %: 30 Base Interbed %: 50	•
Interbedding	Bedding Thickness	
Edit Options	Decimeter (DM)	

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.

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- 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.
- 8. Click on the Save button
- 9. 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.
- 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. . **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.
- 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**

Deleting an Interpreted Lithology Interval with Interbedding.

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 **literbeds button** in the Rock Type Builder. This will activate the Interbed window also shown below.

	Interbedding
	Accessory Rock Type
	Main Lithology
	Solution of the second
	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 🕨	Grain Size: vf snd [very fine sand] v 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)
	Save DEL Exit
E×it	
DEL	
Click on the builded builded	utton

- 4. The user can now go back to the Rock type builder by clicking on the <u>Rock Type</u> button. Also the user can go to the accessory builder by clicking on the <u>Accessory</u> button. Or the user can exit the builder altogether by clicking on the <u>Exit</u> button.
- 5. Press the **Esc** key on the keyboard to exit from the **Interbedding** window.

Drafting an Interpreted Lithology Interval with No Data

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				
Save Del 160.38	Rock Ty	pe	Interbeds	Accessory
Confirm Delete	Sample Quality:	•	No Data Description: Lost (
Edit Favorites Toolbox				Exit

- 2. Select one of the No Data Descriptions from the 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 or Rock 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 \uparrow , (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.

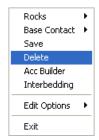
4. Release the mouse button at the desired depth, followed by the release of the Ctrl key on the keyboard, and the following system message will be activated, "*Do you really want to RESIZE the interval from* to ?'

<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.



3. Click on Delete and the following system message will be activated, "Do you really want to DELETE to ?"

Click on the	.05	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

Detailed Lithology Rock Accessory Build here

The Rock Accessory Builder allows you to add accessories to a Rock Type in the Interpretive Lithology layer.

Drawing Accessories

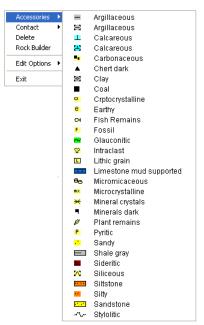
- 1. Double click anywhere within the Interpretive Lithology layer to activate the Rock Type Builder.
- 2. Right click anywhere within the Interpretive Lithology layer to activate the pop-up menu shown below, or click on the Accessory button in the Rock Type Builder window:



3. Select Acc Builder selection from the pop-up menu to activate the Rock Accessory Builder window and the Accessory Favorites List Toolbox.

Rock Acces	sory Builder (X Toolbox X
	Rock Typ	Favorite List
Thinbed:	sltst stringers [siltstone stringers]	• • •
Accessories:		-
Grains:		•
Fossils:		• 0 ₀
Textures:		• • • • • • • • • • • • • • • • • • •
Matrix:		-
Cement:		-
Contact:	1	
Edit Favorites	Exit	

- 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.
 - 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.

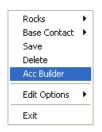
5. Click anywhere within the Interpretive Lithology track to insert the selected Accessory.

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

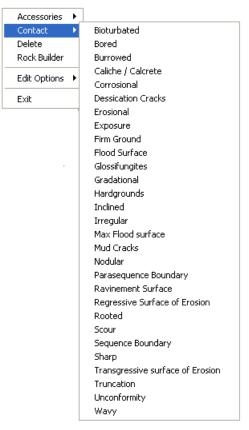
- 1. Double click anywhere within the Interpretive Lithology layer to activate the Rock Type Builder.
- Right click anywhere within the Interpretive Lithology layer to activate the pop-up menu shown below, or click on the Accessory button in the Rock Type Builder window:



- 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 Acces	ory Builder 🛛 🔀
	Rock Type
Thinbed:	_
Accessories:	_
Grains:	-
Fossils:	-
Textures:	-
Matrix:	-
Cement:	-
Contact:	Rooted 💌
Edit Favorites	Toolbox

• 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.



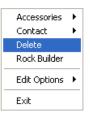
5. Click anywhere within the Interpretive Lithology track to insert the selected Accessory.

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 position.

Deleting a single Thinbed, 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 Ac	cessories?			
Yes No				
		-		

3. **Click** on the <u>Yes</u> 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.

Active Layer Configuration [Interpreted L	ithology] 🛛 🔀
Layer - Display Settings Curve Definitions Layer Sc	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Interpreted Lithology ✓ 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 Scale Change Line Indicator □ Display Scales on non-active layers □ Display Full Logarithmic Scale □ Display Deth-Axis Grid □ Display Data-Axis Grid	Data Type: Interpreted Lithology Within the preted Lithology Uwithin the preted Lithology Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Percent (%) Lithology Layer

This window will allow you to draft a Percent (%) Lithology Layer. The information can either be entered into the Layer directly through this window or can be entered into the Sample Description window and will automatically be populated when the sample description window is closed.

Drafting a Percent (%) Lithology Interval

1. Double click anywhere within the % Lithology track to activate the % Lithology Builder window shown below:

% Lithology Builder		×
<u>S</u> ave Del		
Auto Inc		
10 12650	to 12660	
Rock Type	🔲 No S	ample
MI SIN 두뀨뀨	laristone (calcar	e 🔻
50 💌 🕺 🗛 🕹	Update De	lete
Rock Type [Symbol]	% Action	۱
Dol [<dol>] Ls gs [<ls gs="">]</ls></dol>	020 add 030 add	
Mrlc [<mrlc>]</mrlc>	050 add	
Remaining: 0 % To	_{tal:} 100 %	

Note: If you **click** on an existing interval, that intervals data will be displayed in the window. If you wish to clear the window so you can enter in a new interval click on a blank spot on the % Lithology Layer. This will clear the window so that you can enter in some new data. If you are wishing to continue from a previous entry, click on the last interval (its data will be shown) and then click on the Auto Inc button. The depth fields will be increased by the number

represented in the field below the Auto Inc (Default in Metric is 5m, Imperial is 10ft). **button** and the data in the window will be cleared.

- 2. Type in a From depth in the appropriate field. Depress the tab key to move the cursor to the To field
- 3. Type in a To depth in the appropriate field.
- 4. **Select** a **rock type** from the rock drop down box by clicking on the down arrow and then selecting a Rock Type. If done correctly the name will be displayed in the field.
- 5. Select a percentage (%) from the percentage (%) drop down box by clicking on the down arrow and then selecting a percentage. If done correctly the Percentage (%) will be displayed in the field.
- 6. **Click** on the **button**. If done correctly the Rock Type and % will be displayed in Rock Type Symbol Field. Proceed with Steps 4-6 until you are pleased or 100% is reached.
- 7. Click on the Save button. The Layer / Log will be refreshed with the data you have entered. Press the Esc key on the keyboard to exit from the % Lithology Builder window.

To enter in more data click on the **Auto Inc button** to increase the depth fields by the default and proceed with Steps 4-8.

Resizing an Existing Interval

- 1. Double click on the % Lithology Track to activate the % Lithology Builder window.
- 2. Click on the interval, that you wish to resize, and the data will be displayed in the % Lithology Builder window.
- 3. **Type** in a **new depth** in the To Depth field and then **click** on the **Save button**.
- 4. Press the Esc key on the keyboard to exit from the % Lithology Builder window.

Deleting an Existing Interval

- Double click on the % Lithology Track to activate the % Lithology Builder window. 1.
- Click on the interval, that you wish to delete, and the data will be displayed in the % Lithology Builder window. 2.
- Delete button. This will activate A System Message Warning the user: Deleting the % Click on the 3 Lithology will also remove the associated sample description.

This warning is letting the user know that if the user utilized the sample description window to enter the % Lithology data that these sample descriptions will now be deleted.

- Yes <u>Ν</u>ο Click on the button if this is what you wish to do. Click on the 4. button if t is not what you want to do.
- The user will be prompted with the same Warning message for each subsequent Rock type until they are all 5. deleted.
- 6. Press the **Esc** key on the keyboard to exit from the % Lithology Builder window.

How to Update an Existing % Lithology Record

- 1. Double click on the % Lithology Track to activate the % Lithology Builder window.
- 2. Click on the interval, that you wish to change, and the data will be displayed in the % Lithology Builder window.
- 3. Click on the Rock Type in the Rock Type Symbol field. This places the Rock Type and its associated % into their appropriate fields.
- Select a new Rock Type from the Rock Type drop box and/or select a new percentage (%) from the % drop 4. box field.

update button. This will change your rock type and/or percentage in the Rock Type Symbols field 5. Click on the and change the none to updated.

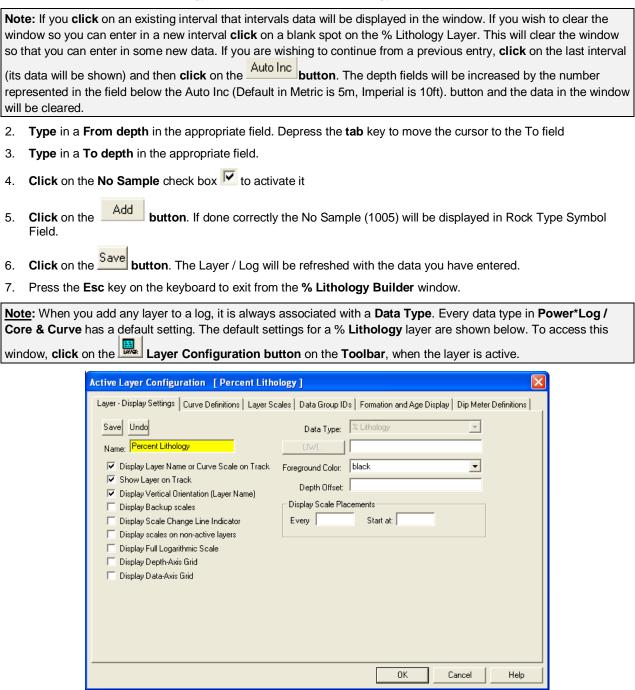
- 6. Repeat Steps 3-5 until you are satisfied with the intervals data.
- Click on the Save button. 7.
- Press the Esc key on the keyboard to exit from the % Lithology Builder window. 8.

How to Delete an Existing % Lithology Record

- 1. Double click on the % Lithology Track to activate the % Lithology Builder window.
- 2. Click on the interval, that you wish to change, and the data will be displayed in the % Lithology Builder window.
- 3. Click on the Rock Type in the Rock Type Symbol field. This places the Rock Type and its associated % into their appropriate fields.
- Del Delete button. This will activate A System Message Warning the user: Deleting the % 4. Click on the Lithology will also remove the associated sample description. If responded to affirmatively, this will change the none to deleted beside the appropriate rock type.
- 5. Repeat Steps 3-4 until you are satisfied with the intervals data. The user can also add other rock types to make the intervals percentage equal 100%.
- Click on the Save button. 6.
- 7. Press the **Esc** key on the keyboard to exit from the % Lithology Builder window.

How to Enter a No Sample into the % Lithology Track

1. Double click on the % Lithology Track to activate the % Lithology Builder 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.

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	Curve Units: units	
Select Curves	Use Curve Scale	
Curve ID	Order	~
🎇 tnph_san	** not set**	
🎇 tnph_lim	** not set**	
thph_dol	** not set**	
NC5	** not set**	
NC4	** not set**	
IC5	** 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 t	he curves that h	nave been a	added through t	he log builder o	or have been i	mported
throu	gh the ASCII or	LAS Import utili	ities.					

3.	Left / Bottom Right / Top Type in or define or type in the left and right scales for your curve set. Scale: 0.00 .6
4.	Select or type in the curve units represented on this layer. Curve Units: units
5.	If the curves are logarithmic select the Log scale check box.
	🗖 Log Scale Cycles: 🛛

- 6. If the curves are logarithmic then the user must indicate how many log cycles you wish to display.
- 7. Click on the OK button.

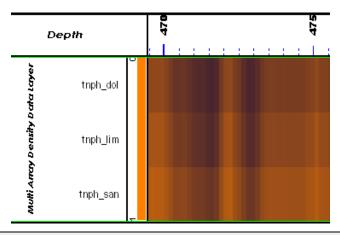
Multi Array Data Dialog				Multi Array Data D)ialog		×
Left / Bottom Right / [*] Scale: 0.6 0	Top Curve Units:	%	•	Left / Bottom Scale: 0.1	Right / Top 1000 Curve Ur	nits: ohmm 💌	
Group ID: 1		🔽 Use Curve	Scale	Group ID: 1		🔽 Use Curve Scale	•
Select Curves				Select Curves			
Curve ID	Order		~	Curve ID	Order		~
🎇 tnph_san	1			🎇 tnph_lim	** not set **		
🧱 tnph_lim	2		_	🎇 tnph_dol	** not set **		
🗱 tnph_dol	3			2 p4c0	4		
2 p4c0	** not set **			🎽 р3с0	3		
25 p3c0	** not set **			2 p2c0	2		
p2c0	** not set **		~	p 1c0	1		~
🗆 Log Scale 🛛 Cycles:				🔽 Log Scale 🛛 Cycl	es: 4		
Delete Group		Cancel	ОК	Delete Group		Cancel	ОК

Linear Curve Data

Logarithmic Curve Data

Below is an example of the Multi Array data layer illustrating Linear Data.

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<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 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 Data Layer]
Layer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age 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: Multi Array Data Image: Multi Array Data Name: Multi Array Data Layer Image: Multi Array Data Image: Multi Array Data Image: Multi Array Data Layer Image: Multi Array Data Image: Multi Array Data Image: Multi Array Data Layer Image: Multi Array Data Image: Multi Array Data Image: Multi Array Data Layer Image: Multi Array Data Image: Multi Array Data Image: Multi Array Data Layer Image: Multi Array Data Image: Multi Array Data Image: Display Layer Name or Curve Scale on Track Image: Depth Offset: Image: Depth Offset: Image: Display Scale Change Line Indicator Display Scale Placements Image: Display Scale Scale Image: Display Depth-Axis Grid Display Data-Axis Grid Image: Scale Scale Image: Scale Scale Scale Image: Display Data-Axis Grid Image: Scale Sca
OK Cancel Help

Oil Show Layer

This window allows you to add Oil Show symbols to the Oil Show layer on the log.

Different symbols are placed on the log to represent different percentages of the **Oil Show**. This is described in the log's legend.

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.

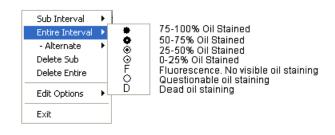
Adding an Entire Interval

<u>Note</u>: All description categories, such as **Oil Shows**, 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 **Oil Shows**, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

1. Double click on the Oil Show layer to activate the Oil Show Builder window.

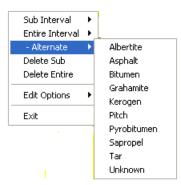
Oil Show Builder			X
Save Del	Stain	%	Dead Stain
Entire Interval: 2555.00 to 2565.00	live	• 75 •	bit [bitumen]

2. Right click once anywhere within the interval on the Oil Show track / layer to activate the pop-up menu.



<u>Note</u>: The percentages (%) and written descriptions for the **Oil Show symbols**, illustrated in the above diagram, were included as a visual aid and do <u>not</u> normally accompany a pop-up menu.

- 3. Click on Entire Interval and then select a Stain %, a Questionable Stain, or a Dead Stain from the ensuing pop-up menu and the entire Oil Show interval will be drawn accordingly.
- 4. You are able to select both a Live Stain and a Dead Stain from the pop-up menu FOR AN ENTIRE INTERVAL and have them alternate with each other for the designated interval. To do so right click in the entire interval, click on the alternate selection and select any of the dead staining types.



- 5. Repeat Steps 2 and 4 to add more entire Oil Show intervals to the Oil Show track.
- 6. Press the Esc key on the keyboard to exit from the Oil Show Builder window.

Note: Regardless of the thickness of the entire interval or sub-interval that you have added to the log, **at least one symbol will be drawn in the middle of the interval**. Be aware that if you have utilized an entire interval and you are now sub-interval on a small increment, there may be some overlapping of symbols for certain log scales.

Tip: With respect to Entire Interval: The frequency of symbols 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.

Deleting an Entire Interval

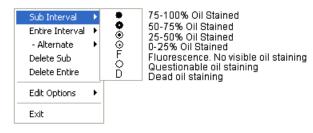
- 1. Double click on the Oil Show layer to activate the Oil Show Builder window.
- 2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.



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

Adding a Sub-Interval

- 1. Double click on the Oil Show layer to activate the Oil Show Builder window.
- 2. **Right click** once anywhere within the **Oil Show** track / layer to activate the pop-up menu and click on Sub Interval and then select a Stain %, a Questionable Stain, or a Dead Stain from the ensuing pop-up menu.



3. Click and drag the mouse on the track / layer over the desired subinterval. Or if you just click your mouse on the track / layer a subinterval of whatever was selected in step 2 will be added to the layer / track at the depth you clicked at. The subinterval size is defaulted to the screen scale accuracy setting. The Oil Show sub-interval will be drawn accordingly.

<u>Note</u>: Regardless of the thickness of the entire interval or sub-interval that you have added to the log, **at least one symbol will be drawn in the middle of the subinterval**. Be aware that if you have utilized an entire interval and you are now sub-interval on a small increment, there may be some overlapping of symbols for certain log scales.

4. Repeat Steps 2 - 3 to add more Oil Show sub-intervals to the Oil Show track.

<u>Note</u>: If you are only using sub-intervals (without the use of any entire intervals), and you wish to have **only one symbol on the log** (for each click), the sub-interval thickness (or increment), should be equal to or less than 0.25m and the symbol frequency (in the **Systems Options** window under **Options** on the application menu bar), should be 1 symbol every 2 meters or greater, for any log scale.

5. Press the **Esc** key on the keyboard to exit from the **Oil Show Builder** window.

Deleting a Sub-Interval

1. **Double click** on the **Oil Show** layer to activate the **Oil Show Builder** window. Sub intervals will become highlighted in red.

2. Right click anywhere within the sub-interval you wish to delete to activate the pop-up menu.



- 3. Click on Delete Sub and the Oil Show sub-interval will be deleted accordingly.
- 4. Repeat **Steps 2** and **3** to delete more **Oil Show** sub-intervals from the **Oil Show** track.
- 5. Press the Esc key on the keyboard to exit from the Oil Show Builder window.

<u>Note</u>: Every type of layer in **Power*Log/Curve** has a **Data Type** classification. The default settings for the **Oil Show** layer are shown below. To access this window, click on the **Dil Show** Layer Configuration button on the **Toolbar**, when the **Oil Show** layer is active.

Oil Staining Layer

This layer allows you to add or delete Oil staining in the Power*Core application. . There is a Bed Restricted (BR) and a Non-Bed Restricted (NBR) layer types.

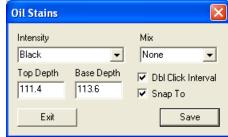
The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding grain size) where you have to have a rock type in order to enter an oil staining. The oil staining is also restricted to the bed you are drawing in. Also, when the bed is resized or deleted the oil staining symbol may be also resized or deleted if the diagenesis 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.

Snap To Snap To: When checked allows the user to snap to the previous data entry if you click and drag within 10 times the mouse pointer or screen scale accuracy of the previous data entry.

Adding an Oil Staining type over an Entire Interval

1. Double click on the Oil Staining track / layer to activate the Oil stains window.



 Right click anywhere on the Oil staining track / layer to activate the pop-up menu and select the intensity selection to activate its pop out menu as shown below or click directly into the builder and utilize the drop down menu section:



3. If a mix is required **Right click** anywhere on the **Oil staining** track / layer to activate the pop-up menu and select the mix selection to activate its pop out menu as shown below or click directly into the builder and utilize the drop down menu section.



4. Double Click on the layer over the interval you wish to enter the selected data (Make sure Dbl Click Interval is checked) and it will be drawn accordingly.

<u>Tip</u>: The **frequency of mix symbols** (G & W) 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.

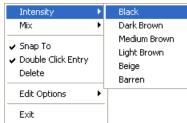
- 5. Repeat Steps 2 4 to add more oil stains to the track.
- 6. Press the Esc key on the keyboard to exit from the Oil Stains builder window.

Adding an Oil Staining type and interval

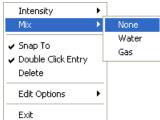
1. Double click on the Oil Staining track / layer to activate the Oil stains window.

Oil Stains		
Intensity Black	•	Mix None
Top Depth 111.4	Base Depth 113.6	 ✓ Dbl Click Interval ✓ Snap To
Exit		Save

2. **Right click** anywhere on the **Oil staining** track / layer to activate the pop-up menu and select the intensity selection to activate its pop out menu as shown below or click directly into the builder and utilize the drop down menu section:



3. If a mix is required **Right click** anywhere on the **Oil staining** track / layer to activate the pop-up menu and select the mix selection to activate its pop out menu as shown below or click directly into the builder and utilize the drop down menu section.



4. Click and drag the mouse on the track / layer over the desired interval. The oil staining intensity and mixture (if selected) interval will be drawn accordingly.

<u>Tip</u>: The **frequency of mix symbols** (G & W) 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.

- 5. Repeat Steps 2 4 to add more oil stains to the track.
- 6. Press the **Esc** key on the keyboard to exit from the **Oil Stains builder** window.

Resizing an Interval

Double click on the Oil Staining track / layer to activate the Oil Staining Builder window.

Mouse Pointer Method

- 1. **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 double arrows.
- 2. 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.

Deleting an interval

1. Double click on the Oil Staining track / layer to activate the Oil Stains builder window.

Oil Stains		
Intensity Black	•	Mix None
Top Depth 111.4	Base Depth 113.6	 ✓ Dbl Click Interval ✓ Snap To
Exit		Save

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 Oil Staining interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Oil Staining intervals from the Oil Staining track / layer.
- 5. Press the Esc key on the keyboard to exit from the Oil Stains 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 **Oil Staining** layer are shown below. To access this window, click on the **Distaining** Layer Configuration button on the **Toolbar**, when the **Oil Staining** layer is active.

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

Percent Layer

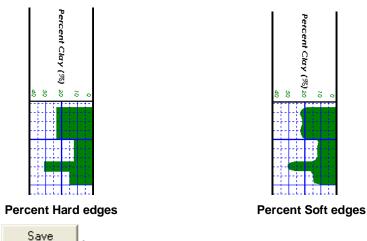
Percent can be added either as a track or a layer to your log. When you add a Percent as a layer to your log, you must assign it to a specific track.

Drawing Percents

1. Double click on the Percent track to activate the Percent Layer window.

	Percent Layer [Clay]	Color 🛛 🛛 🔀
	Back Color Fore Color Gradient Pattern: Snap to % 1	Basic colors:
	Soft Edges	Custom colors: Image: Image
The defa	ult is a black histogram. The user has the ability	Define Custom Colors >> OK Cancel to modify this.
lick on the utton.	Back Color button and select a color from the	he palette and then click on the
lick on the	Fore Color button and select a color from the	he palette and then click on the

- 4. Click on the Gradient Gradient to activate a check mark if you want the gradient option.
- 5. **Click** on the **Pattern** field box arrow to select a specific pattern type.
- 6. Click on the Snap to field box arrow in the Fills for Environment window and select any of the percents from the resulting choice list. This allows the mouse to move or less precision when dragging in a percentage.
- 7. Soft Edges Soft Edges: When checked will round off the percent and will present the percent edges with sine wave lines instead of strain lines.



8. Click on the button.

2.

3.

- Define the desired interval by clicking and dragging the mouse pointer from a specific Measured Depth and Percent (%), as indicated within the mouse pointer display box to another Measured Depth on the Percent (%) track.
- 10. Release the mouse button and the percent interval 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 [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
- 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.

ctive Layer Configuration [Percent]
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: 100 Right: Verbal Settings Grain Size Scales Image: Carbonate Texture Scale Depth-Axis Grid Style: Data-Axis Grid Type: Linear Units:
Dip Meter Quality Scale Range From: To: To: Linear Cycles Major Minor Increment 5 25 Log. Cycles: Concel 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 **Save** button and select from the System Message window to exit the Layer Configuration 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 **Generic Category** are shown below. To access this window, click on the **Layer Configuration button** on the **Toolbar**, when the **Percent** layer is active.

Active Layer Configuration [Percent]	
Layer - Display Settings Curve Definitions Layer Sc	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Percent Image: Display Layer Name or Curve Scale on Track. Image: Show Layer on Track Image: Display Vertical Orientation (Layer Name) Image: Display Vertical Orientation (Layer Name) Image: Display Backup scales Image: Display Scale Change Line Indicator Image: Display scales on non-active layers Image: Display Full Logarithmic Scale Image: Display Data-Axis Grid	Data Type: Percent Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

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.

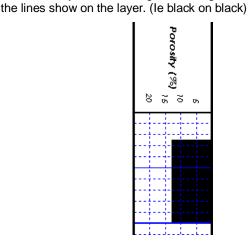
Sub-interval: A sub-interval can be of any thickness (less than the entire rock unit or bed), and can rest within an entire interval or can stand alone as a sub-interval without being part of a entire interval. You can have as many sub-intervals as you wish. If you have a sub-interval equal to or greater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

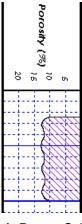
Snap to: Snap To when checked allows the user to find the top or bottom of an interval easily with the mouse pointer as you have to be within 10 times the mouse pointer or screen accuracy of the interval to catch the top or bottom with a drag.

Double Click Interval Dbl Click Interval Entry: 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: 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





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	S		-	Pattern Color: 🗾	I from the Fill
	pattern list drop bo)X.						
					.	_		

- 3. Select the Foreground Color (Line Color) from the Pattern Color: selector with button.
- 4. 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 configuration tab dialogue window.

- 5. 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 OK 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.

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

Porosity Builder	
Sub-Interval: Dbl Click Interval Snap To	Grade (%) 50 to 1460.00
Soft Edges Pattern:	Pattern Color:
Crosshatch at 45 degree	s 🔹

- 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.
- 3. 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.

4. With the Voltarian balance of 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.
- 2. 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.

Changing 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 Save Undo Porosity Grade Scale Percent Layer Scale Dip Meter Scale Grain Size Scale Carbonate Texture Scale Left: 25 Verbal Settings Grain Size Scales To To: Dip Meter Quality Scale Range From: To:	Depth-Axis Grid Style: Full ▼ Data-Axis Grid Type: Linear Units: % Linear Cycles Major Minor Increment 5 Log. Cycles:
OK	Cancel Help

- 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 **Save** button and select from the System Message window to exit the Layer Configuration 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 **Porosity Grade** layer.

Active Layer Configuration [Porosity]	
	ales Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Porosity Grade UWI Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Porosity Type Layer

This function allows you to add or delete various Porosity Types on your log.

Adding Porosity Types

1. Double click on the Porosity Type layer to activate the Porosity Type Builder window.



2. Right click anywhere within the Porosity Type track to activate the pop-up menu.



Note: The written descriptions of the **Porosity Types**, illustrated in the above diagram, were included as a visual aid and do <u>not</u> normally accompany a pop-up menu.

- 3. Select a **Porosity Type** from the pop-up menu and it will automatically be displayed in the **Porosity Type** field within the **Porosity Type Builder** window.
- 4. Click anywhere within the **Porosity Type** track to insert the selected **Porosity Type** symbol(s) at their desired locations.
- 5. Repeat Steps 2 to 4 to add more Porosity Types.
- 6. Press the **Esc** key on the keyboard to exit from the **Porosity Type Builder** window.

Deleting Porosity Types

- 1. Double click on the Porosity Type layer to activate the Porosity Type Builder window.
- 2. Right click on the Porosity Type symbol you wish to delete to activate the pop-up menu shown below:



- 3. Click on Delete from the pop-up menu and the selected Porosity Type symbol will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Porosity Types.
- 5. Press the Esc key on the keyboard to exit from the Porosity Type Builder window.

Note: Every type of layer in Power*Log / Core & Curve has a Data Type classification. The default settings for a Porosity Type layer are shown below. To access this window, click on the Layer Configuration button on the Toolbar, when the **Porosity Type** layer is active.

Active Layer Configuration [Porosity Type	e] 🛛 🔀 🔀 🔀 🔀 🔀 🔀 🕹 🔀 🔀 Stream and Age Display Dip Meter Definitions
Save Undo Name: Porosity Type ✓ 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 Scale Change Line Indicator □ Display scales on non-active layers □ Display Full Logarithmic Scale □ Display Depth-Axis Grid □ Display Data-Axis Grid	Data Type: Porosity Type
	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.

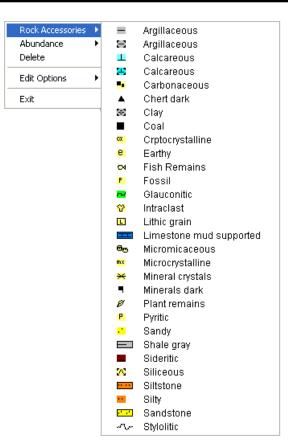
Adding a Rock Accessory

<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 can	be turned on	or off by clicking on the Toolbox button in the builder.	
	Rock Access	ory Builder 🛛 🔀	Toolbox 🔀
	Thinbed: Accessories: Grains: Fossils: Textures: Matrix: Cement: Abundance:		Favorite List
	T op:	Base: Dbl Click Interval Entry Snap To Nearest	G F ■ ■
	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.
 - Rock Accessories
 Image: Constraint of the second second
- 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. Click on the symbol you wish to resize. If done correctly it will indicate with the resize boxes.
- Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends and then Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into resize cursor
- 4. . Release the mouse button and the interval will be resized.

Keypad Method

1. Click once on the Rock Accessory 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

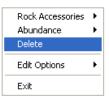
- 1. Double click on the Rock Accessory track / layer to activate the Rock Accessory Symbols window.
- 2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
- 3. Hold the CTRL Key down and Click and drag the interval to a new position. Your cursor will turn into a 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	ory Builder	×
Thinbed:	pyr nodules (pyrite nodules)	•
Accessories:		-
Grains:		•
Fossils:		•
Textures:		•
Matrix:		•
Cement:		•
Abundance:		•
Тор:	1204.00 Base: 1213.00 V Dbl Click Interval En ✓ Snap To Nearest	try
Edit Favorites	Save Exit	

2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.



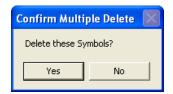
- 3. Click on Delete and the Rock Accessory interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Rock Accessory intervals from the Rock accessories track / layer.
- 5. Press the Esc key on the keyboard to exit from the Rock Accessory Symbol window.

Deleting Multiple Intervals

1. Double click on the Rock Accessory track / layer to activate the Rock Accessory Builder window.

Rock Access	ory Builder 🛛 🗙
Thinbed:	🕑 pyr nodules [pyrite nodules] 🔹 💌
Accessories:	•
Grains:	•
Fossils:	•
Textures:	•
Matrix:	•
Cement:	•
Abundance:	•
Тор:	1204.00 Base: 1213.00 V Dbl Click Interval Entry
Edit Favorite:	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.



- 4. Click on yes 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 Rock Accessory Builder window.

Note: Every type of layer in Power*Log, Power*Core and Power*Curve has a Data Type classification. The defa	ault
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 Layer Configuration [Rock Accessor	ies] 🛛 🔀
Layer - Display Settings Curve Definitions Layer Sca Save Undo Name: Rock Accessories ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) ✓ Display Backup scales ✓ Display Scale Change Line Indicator	ies]
 Display scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid Display Data-Axis Grid 	OK Cancel Help

Rounding Layer

This function allows you to add and delete Rounding in the Rounding layer on the log.

Roundness can be described as a ratio of the average curvature radius of the corners (or edges) of a solid to the curvature radius of the maximum inscribed sphere.

Definitions of a 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.

Adding an Entire Interval

<u>Note</u>: All description categories, such as **Rounding**, 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 **Rounding**, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

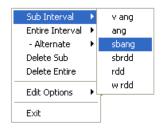
1. Double click on the Rounding track / layer to activate the Rounding Builder window.

Ro	ounding Build	ler			×
_	Save Del Entire Interval: 3 Sub-Interval:	3506.00 to 3529.00	sbang (subangular)	★ to sbrdd [subrounded]	•

2. Right click anywhere within the interval on the Rounding track / layer to activate the pop-up menu.



- 3. Click on Entire Interval and then select a degree of Rounding from the ensuing pop-out menu and the entire Rounding interval will be drawn accordingly.
- 4. You are able to select two types of rounding FOR AN ENTIRE INTERVAL and have them alternate with each other for the designated interval. To do so right click on the track in the entire interval, click on the alternate selection and select another rounding type.



- 5. Repeat Steps 2 and 4 to add more entire Rounding intervals to the Rounding track.
- 6. Press the Esc key on the keyboard to exit from the Rounding Builder window.

<u>Note</u>: Regardless of the thickness of the entire interval or sub-interval that you have added to the log, at least one symbol will be drawn in the middle of the interval. Be aware that if you have utilized an entire interval and you are now sub-internalizing on a small increment, there may be some overlapping of symbols for certain log scales.

<u>Tip</u>: With respect to **Entire Interval**: The **frequency of symbols** 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** scales, you will get 1 symbol every 1m at the **1:120** scale, 1 symbol every 4m at the **1:480** scales, and so on.

Deleting an Entire Interval

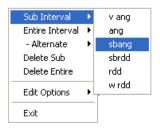
- 1. Double click on the Rounding track / layer to activate the Rounding Builder window.
- 2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.



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

Adding a Sub-Interval

- 1. Double click on the Rounding track / layer to activate the Rounding Builder window.
- 2. **Right click** anywhere within the **Rounding** track / layer to activate the pop-up menu and **click** on **Sub Interval** and then select a degree of **Rounding** from the ensuing pop-out menu.



3. Click and drag the mouse on the track / layer over the desired subinterval. Or if you just click your mouse on the track / layer a subinterval of whatever was selected in step 2 will be added to the layer / track at the depth you clicked at. The subinterval size is defaulted to the screen scale accuracy setting. A degree of rounding sub-interval will be drawn accordingly.

<u>Note</u>: Regardless of the thickness of the entire interval or sub-interval that you have added to the log, **at least one** symbol will be drawn in the middle of the interval. Be aware that if you have utilized an entire interval and you are now sub-intervalizing on a small increment, there may be some overlapping of symbols for certain log scales.

4. Repeat Steps 2 - 3 to add more Rounding sub-intervals to the Rounding track.

<u>Note</u>: If you are only using sub-intervals (without the use of any entire intervals), and you wish to have **only one** symbol on the log (for each click), the sub-interval thickness (or increment), should be equal to or less than 0.25m and the symbol frequency (in the **Systems Options** window under **Options** on the application menu bar), should be 1 symbol every 2 meters or greater, for any log scale.

5. Press the **Esc** key on the keyboard to exit from the **Rounding Builder** window.

Deleting a Sub-Interval

- 1. Double click on the Rounding track / layer to activate the Rounding Builder window.
- 2. **Right click** anywhere <u>within</u> the sub-interval you wish to delete to activate the pop-up menu.



- 3. Click on Delete Sub and the Rounding sub-interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Rounding sub-intervals from the Rounding track.
- 5. Press the **Esc** key on the keyboard to exit from the **Rounding 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 **Rounding** layer are shown below. To access this window, click on the **Layer Configuration button** on the **Toolbar**, when the **Rounding** layer is active.

Active Layer Configuration [Rounding]	
Layer - Display Settings Curve Definitions Layer Sca	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Rounding Image: Display Layer Name or Curve Scale on Track Image: Show Layer on Track Image: Display Layer Name or Curve Scale on Track Image: Display Vertical Orientation (Layer Name) Image: Display Vertical Orientation (Layer Name) Image: Display Backup scales Image: Display Scale Change Line Indicator Image: Display Scales on non-active layers Image: Display Full Logarithmic Scale Image: Display Depth-Axis Grid Image: Display Data-Axis Grid	Data Type: Rounding UWI Image: Constraint of the second seco
	OK Cancel Help

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 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

button in the builder.

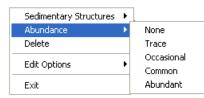
		Toolbox 🗗
		Favorite List
		785e 🖉
	_	~
Sedimentary Structures		
Bedding / Cross bedding		₩ ₩ ₩ ₩
	•	je i
J Laminations / Cross Laminations		=
cppxlam [current ripple cross lamination]		
1		**
Other		
	_	<u>CM</u>
Abundance: Occasional	•	DM
Dbl Click Interval Entry	Edit Favorites	***
Snap To Nearest		≋ ≢
	Toolbox	7
	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
- 3. 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.

Sedimentary Structures 🕨 🕬 Climbing ripple	e cross lamination
Abundance 🔹 🔸 🔊 Contorted/slum	nped laminations
Delete 🛛 🗸 Current ripple of	ross lamination
Flaser laminati	ons
Edit Options /// High angle par	allel laminations
Exit 🔫 High angle cros	ss laminations
🥟 🖉 Low angle para	allel laminations
🖛 Low angle cros	s laminations
💓 Chevron cross	bedding
ত Centimeter bed	ding
Decimeter bed	ding
→ Herringbone cr	oss bedding
See Hummock cros	s bedding
<u>·····</u> Inverted/graded	1 bedding
🗯 Massive/homo	genous bedding
🌩 Bioturbated - cl	nurned
∾v⊢ Bioturbated - m	oderately
™v _w Bioturbated - m	oderately well
-∿⊢ Bioturbated - s	lightly
–∿∞ Bioturbated - w	ell
📟 Boudinage - Sa	ausage structure
👓 Dish structure	
< Flame structure	9
🖙 Flute mark	

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.



- 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

- 2. Click on the symbol you wish to resize. If done correctly it will indicate with the resize boxes.
- 4. . 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

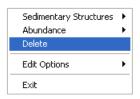
- 1. **Double click** on the **Sedimentary Structure** track / layer to activate the **Sedimentary Structure Builder** window.
- 2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
- 3. Hold the CTRL Key down and Click and drag the interval to a new position. Your cursor will turn into a 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.

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. **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	×
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 <u>within</u> the intervals you wish to delete.
- 3. Release the mouse button to activate a Confirm Multiple Delete message.

Confirm Multip	ole Delete
Delete these Syr	mbols?
Yes	No

- 4. Click on <u>Ves</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.

<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 **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.

c <mark>tive Layer Configuration [Sedimentary S</mark> Layer - Display Settings Curve Definitions Layer Sca		s Formation and Age Display	Dip Meter Definitions
Save Undo Name: Sedimentary Structures ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) Display Backup scales Display Scale Change Line Indicator Display Scale Change Line Indicator Display Scale Son non-active layers Display Depth-Axis Grid Display Data-Axis Grid	Data Type: UWI Foreground Color: Depth Offset: Display Scale Pla Every	Sedimentary Structures NBR	>
		ОК С	Cancel Help

Slide / Rotate Layer

This layer provides a visual representation of the **Drill String Rotation** and **Orientation** throughout the progress of the well. You can also Import the Slide / Rotate data from a slide sheet when it is saved in a *.csv File format.

Base Depth: 301
🖲 Right 🔿 Left
🔽 Display Fill 🛛 Save

The **Rotate** is represented as a blank space on the layer. The only thing you can physically draw on the layer is a **Slide**. This is shown as a grey bar with the letter S covering the distance of the orientation If a Toolface is entered into the data entry window the slide orientation is viewed. The appearance of the slide Toolface font is available through the right click menu option where you can align the font top / centre / bottom, left / centre / right, opaque, vertical or horizontal depending on your track width and log format.

- Display Text check box allows the user to view the S's or Tool Face Orientation in the layer display.
- Display Fill check box allows the user to view the black strip drawn in by the user.

Drawing a Slide

Mouse Pointer Method

- 1. Double click on the Slide / Rotate track to activate the Slide / Rotate window.
- 2. Position the mouse pointer at the depth on the **Slide / Rotate** track where the **Slide** begins.
- 3. Click and drag the mouse pointer to the depth where the Slide ends.
- Release the mouse button and the Slide will be drawn accordingly.
- 5. If you want to fill in the Tool face degrees and orientation, Click on the slide you just dragged, so that it is refreshed in the builder and then Type in the Tool face Orientation in degrees in the Tool face field. (180 degrees will be represented with a LS {low side} and 0 degrees will be represented with a HS {high side})
 6. Select from the Digital cat logic builder and in the provide of the select form the select of the select form the selec
- 6. Select from the Right or Left Radio buttons (if applicable)
- 7. Click on the Save button
- 8. Press the **Esc** key on the keyboard to exit or **Click** on the **Close button** in the upper right hand corner of the builder. This will close down the Slide Rotate builder window.

Keypad Method

- 1. Double click on the Slide / Rotate track to activate the Slide / Rotate window.
- 2. **Type** in a Top depth in the **Top Depth** field.
- 3. Type in a Base depth in the Base Depth field.
- 4. **Type** in the Tool face Orientation in degrees in the **Tool face field.** (180 degrees will be represented with a LS {low side} and 0 degrees will be represented with a HS {high side})
- 5. Select from the Right or Left Radio buttons. (if applicable)
- 6. Click on the Save button.
- 7. Press the **Esc** key on the keyboard to exit or **Click** on the **Close button** in the upper right hand corner of the builder. This will close down the Slide Rotate builder window.



Deleting a Slide

- 1. Double click on the Slide / Rotate track to activate the Slide / Rotate window.
- 2. Right click on the Slide you wish to delete. This will activate a pop out window and select delete.
- 3. Press the **Esc** key on the keyboard to exit or **Click** on the **Close button** in the upper right hand corner of the builder. This will close down the Slide Rotate builder window.

Resizing a Slide

- 1. Double click on the Slide / Rotate track to activate the Slide / Rotate window.
- 2. Hold down the Ctrl key on the keyboard and position the mouse pointer within the Slide boundary you wish to

resize and you will see your mouse pointer turn into a resize \downarrow cursor.

- 3. Click and drag the mouse button in the appropriate direction to resize the Slide it.
- 4. Release the mouse button, followed by the release of the Ctrl key on the keyboard, and the Slide interval will be resized accordingly.
- 5. Alternatively, click on the slide (it will then be displayed into the builder) and then type in a new top depth or

base depth (not both) and then click on the Save button.

6. Press the Esc key on the keyboard to exit from the Slide / Rotate window or Click on the Close button in the upper right hand corner of the builder. This will close down the Slide Rotate builder window

Right Click Options for the Slide Rotate builder.

Modifying the Display settings for the Slide / Rotate layer

To modify the display options of an individual slide the user can right click on the slide and select one of these editing options. Once the options have been modified the program will remember these options for the next slide you draw.

Delete	
Fills	۲
🗸 Display Fill	
🗸 Display Text	
🗸 Display Long Form	
Opaque Text	
Vertical Align	۲
Horizontal Align	۲
 Vertical Orientation 	
Edit	
Edit Options	۲
Add / Edit / Open Link	
Exit	

1. Double click on the Slide / Rotate track to activate the Slide / Rotate window.

Delete Option - **Right click on an existing slide** with the builder open to activate the pop out menu seen above and **select Delete** to delete a slide.

Display Fill Option – **Right click on an existing slide** with the builder open to activate the pop out menu seen above and **select Display fill** to toggle between the slide color fill and white with grey lines to represent the length of the slide interval. The actual color of the slide can only be changed in the Layer configuration window.

Display Text Option – **Right click on an existing slide** with the builder open to activate the pop out menu seen above and **Select Display Text** to toggle between the S (Slides) or the Tool face orientation if entered being displayed or not on the slide interval.

Display Long Form Option - Not applicable.

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Opaque Text Option – **Right click on an existing slide** with the builder open to activate the pop out menu seen above and **select Opaque Text** to toggle between a white frame around the S (Slides) or the Tool face orientation for a better visibility or not.

Vertical Align Option - **Right click on an existing slide** with the builder open to activate the pop out menu seen above and **select Vertical Align** and this will activate another menu and select from the top bottom centre choices and allows the user to determine how they want the S (Slides) or the Tool face orientation text to be aligned and oriented within that slide interval.

Horizontal Align Option - Right click on an existing slide with the builder open to activate the pop out menu seen above and select Horizontal Align and this will activate another menu and select from the left right

centre choices and allows the user to determine how they want the S (Slides) or the Tool face orientation text to be aligned and oriented within that slide interval.

Vertical Orientation Option - Right click on an existing slide with the builder open to activate the pop out menu seen above and select Vertical Orientation which will allow the user to change the text orientation from up down text to left right text.

Edit Option- Not applicable. If you want to change the color of the slide you must access the layer configuration and change the color there.

<u>Note</u>: Every type of layer in **Power*Log / Core & Curve** has a **Data Type** classification. The default settings for the **Slide / Rotate** layer are shown below. To access this window, **click** on the **Layer Configuration button** on the **Toolbar**, when the **Slide / Rotate** layer is active.

Layer - Display Settings | Curve Definitions | Layer Scales | Data Group IDs | Formation and Age Display | Dip Meter Definitions |

UWI...

Every

Data Type:

Foreground Color: light gray

Display Scale Placements

Depth Offset:

Slide / Rotate

Start at:

Ŧ

Cancel

Help

	🥅 Display Data-Axis Grid	
		OK
<u> Cnair</u>	lar'a Daak Typa (Cara) Lavar	

Sneider's Rock Type (Core) Layer

Active Layer Configuration [Slide - Rotate]

Solution Curve Scale on Track

Display Vertical Orientation (Layer Name)

Display scales on non-active layers Display Full Logarithmic Scale Display Depth-Axis Grid

Save Undo

Name: Slide - Rotate

Show Layer on Track

Display Backup scales
 Display Scale Change Line Indicator

This layer allows you to add or delete Sneider's Rock type classification for permeability in our Power*Core application. There is only a **Non-Bed Restricted (NBR)** type of Sneider's Rock type (C) layer.

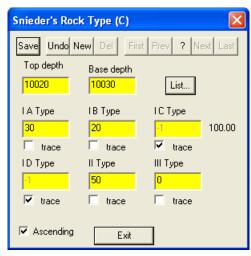
The **non-bed restricted (NBR)** layer type is not associated with any rock type or bed and can be entered anywhere the user wishes and will not be affected by the resizing or deleting of a bed.

top bottom 🗸 center

> left right ✔ center

Adding a Sneider's Rock type (C)

 Double click on the Sneider's Rock Type (C) track / layer to activate the Sneider's Rock Type (C) window. If the window has data displayed the user must click on the New button,



- 2. Type in a top depth value and press the Tab key to advance the cursor to the base depth field.
- 3. Type in a base depth value and press the Tab key to advance the cursor to the A type field.
- 4. **Type** in **values** for the different types, **tabbing** between fields and selecting the **Trace** check box 🔽 to activate a trace value.
- 5. Click on the Save button or press ALT-S and then click on the appropriate button when prompted with the Shortcut Options system window.

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

implemented when the record is saved and the **Start New Record** option is chosen. 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.

<u>Note</u>: You will not see the intervals added until after you have closed this data entry window. 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.

6. Repeat **Steps 1 - 5** to add more permeability types to the track.

2.

7. Press the Esc key on the keyboard to exit from the Sneider's Rock type (C) Symbol window.

How to edit or change a Sneider's Rock Type (C) interval

- 1. Double click on the Sneider's Rock Type (C) Track / Layer just above the interval you wish to modify. This will activate the Sneider's Rock type (C) window.
 - Click on the List... button to view a list of Sneider's Rock type (C) intervals entered to date and then click

on the entry that you wish to edit. Or, **click twice** on the **Query button** and then **click** on the **button** to view all of the records in the database.

3. Once the selected Top Depth and its related data are displayed in the **Sneider's Rock type (C)** 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 4 Shortcut Options system window.

Deleting a Sneider's Rock Type (C) interval

- Double click on the Sneider's Rock Type (C) Track / Layer just above the interval you wish to delete. This will 1. activate the Sneider's Rock type (C) window.
- List... button to view a list of Sneider's Rock type (C) intervals entered to date and then click 2. Click on the

? Next on the Top depth that you wish to edit. Or, click twice on the Query button and then click on the button to view all of the records in the database.

Del Once the selected description is displayed in the Sneider's Rock type (C) window, click on the Delete 3. button.

Field Restriction Table:

Top Depth	10.5	Numeric	Mandatory
Base Depth	10.5	Numeric	Mandatory
АТуре	6.3	Numeric	Mandatory
B type	6.3	Numeric	Mandatory
C Type	6.3	Numeric	Mandatory
D Type	6.3	Numeric	Mandatory
II Туре	6.3	Numeric	Mandatory
III Type	6.3	Numeric	Mandatory

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 Sneider's Rock Type (C) 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 [Sneider Rock Type (C)]	Active Layer Configuration [Sneider Rock Type (C)]
Leyer - Display Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Display Dip Meter Definitions Save Undo Data Type: Sneider Rock Type V Image: Sneider Rock Type V////////////////////////////////////	Layer - Display Settings: Curve Definitions: Layer Scales Data Broup IDs Formation and Age Display Dip Meter Definitions Sawo Undo Processly Disde Scale Carbonate Texture Scale Dip Meter Scale Left: Right: Depth-Axis Grid Vectad Settings: to To Carbonate Texture Scales Data Axis Grid Carbonate Texture Scales Data Axis Grid Dip Meter Quality Scale Range to Trace From: To: To: Dip Meter Quality Scale Range To: Lange: Close:
OK Cancel Help	OK Cancel Help

Sneider's Rock Type (Geo) Layer

This layer allows you to add or delete Sneider's Rock type classification for permeability in all our applications. There is only a Non-Bed Restricted (NBR) type of Sneider's Rock type (Geo) layer.

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 Sneider's Rock type

Note: All bed restricted description categories, such as Sneider's Rock Type (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 fracture, until there is a rock unit or bed interval added to the Interpreted Lithology Layer for that interval.

- Double click on the Sneider's Rock Type track / layer to activate the Sneider's Rock Type (Geo) Builder 1. Toolbox window and toolbox. The toolbox can be turned on or off by clicking on the button in the builder. Toolbox Favorite List IA IC ID Ш ш Sneider Rock Type (Geo) B 18 (Perm Type 18) Abundance: Ŧ Base: 10022 Dbl Click Interval Entry ₹ Top: 10011 $\overline{\mathbf{v}}$ Snap To Nearest Toolbox Save Exit
- 2. Right click anywhere on the Sneider's Rock Type track / layer to activate the pop-up menu.

Permeabilities	►	IA	Perm Type 1A
Abundance	۲	IВ	Perm Type 1B
Delete		IC	Perm Type 1C
Edit Options	Þ	ID	Perm Type 1D
Exit		Ш	Perm Type 1D
LAIC		Ш	Perm Type III

- 3. **Click** on the **Permeabilities** 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 Sneider's Rock type symbol, **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. 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.
- 6. Double Click within an existing rock type interval in the Sneider's Rock type 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 **Sneider's Rock type Symbols** window.

7. Click and drag the mouse on the track / layer close to an existing Sneider's Rock type Symbol (either above or below in the same column) with the Snap To Nearest activated and there will be no spaces between the

symbols. **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 Sneider's Rock type symbols 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 Sneider's Rock type Symbols Builder window.

Resizing an Interval

1. **Double click** on the **Sneider's Rock type** track / layer to activate the **Sneider's Rock type Symbols Builder** window.

Mouse Pointer Method

- 2. Click on the Symbol you wish to resize. If done correctly it will indicate with the resize boxes.
- 3. Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends and then Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into

resize cursor 🖡

4. . Release the mouse button and the interval will be resized.

Keypad Method

1. Click once on the Sneider's Rock type Symbol you want to resize to bring it into the builder and change the from

depth 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 **Sneider's Rock type** track / layer to activate the **Sneider's Rock type Symbols Builder** window.
- 2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
- 3. Hold the CTRL Key down and Click and drag the interval to a new position. Your cursor will turn into a 🗘 if done correctly. (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 Fracture track / layer to activate the Sneider's Rock type Symbols Builder window.

Sneider Rock Type (Geo)			
IB 1B [Perm Type	18]		•
Abundance:			-
Тор: 10011	Base: 10022	I Dbl Click Inte I Snap To Nea	
	Toolbox	Save	Exit

2. **Right click** anywhere <u>within</u> the interval you wish to delete to activate the pop-up menu.

Permeabilities Abundance) }
Delete Edit Options	•
Exit	

- 3. Click on Delete and the Sneider's Rock type interval will be deleted accordingly.
- 4. Repeat **Steps 2** and **3** to delete more Sneider's Rock type intervals from the **Sneider's rock type symbols** track / layer.
- 5. Press the **Esc** key on the keyboard to exit from the Sneider's Rock type **Symbols Builder** window.

Deleting Multiple Intervals

1. Double click on the Sneider's Rock type track / layer to activate the Sneider's Rock type Builder window.

Sneider Rock Type (Geo)		
IB 1B [Perm Type	18]	•
Abundance:		•
Тор: 10011	Base: 10022	 Dbl Click Interval Entry Snap To Nearest
	Toolbox	Save

- 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 🔣		
Delete these Symbols?		
Yes No		

- 4. Click on button and the Sneider's Rock type interval encompassed with your drag will be deleted accordingly.
- 5. Press the Esc key on the keyboard to exit from the Sneider's Rock type 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 Sneider's Rock type (Geo) layer are shown below. To access this window, click on the Royal Layer
Configuration button on the Toolbar, when the Sneider's Rock Type layer is active.

Active Layer Configuration [Sneider Rock	Туре (С)]
Layer - Display Settings Curve Definitions Layer Sc. Save Undo Name: Sneider Rock Type ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) Display Backup scales Display Scale Change Line Indicator ✓ Display scales on non-active layers ✓ Display Full Logarithmic Scale ✓ Display Depth-Axis Grid	Type (C)] Image: Second Constrainty ales Data Group IDs Formation and Age Display Dip Meter Definitions Data Type: Sneider Rock Type (C) Image: Second Constrainty Image: Uwill Image: Second Constrainty Image: Second Constrainty Foreground Color: black Image: Second Constrainty Depth Offset: Image: Second Constrainty Start at: Image: Second Constrainty Display Scale Placements Image: Start at: Image: Second Constrainty Start at: Image: Second Constrainty
I Display Data-Axis Grid	OK Cancel Help

Sorting Layer

This function allows you to add or delete Sorting in the Sorting layer on the log.

Sorting is defined as a mathematical measure of uniformity or the spread (or distribution) of particle sizes in sediment. **Sorting** is usually based on the statistical spread of the particle size frequency curve.

Well sorted	less than 2 size grades (phi)
Moderately well sorted	2 - 3 size grades (phi)
Moderately sorted	3 - 6 size grades (phi)
Poorly sorted	6 - 10 size grades (phi)
Very poorly sorted	greater than 10 size grades (phi)

Definitions of a 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.

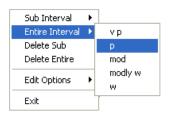
Adding an Entire Interval

<u>Note</u>: All description categories, such as **Sorting**, 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 **Sorting**, until there is a rock unit or bed interval added to the **Interpreted Lithology Layer** for that interval.

1. Double click on the Sorting track / layer to activate the Sorting Builder window.

Sorting Builder		
Save Del Entire Interval: 3506.00 to 3529./ Sub-Interval:	00 mod [moderate]	•

2. Right click anywhere within the interval on the Sorting track / layer to activate the pop-up menu.



- 3. Click on Entire Interval and then select a degree of Sorting from the ensuing pop-up menu and the entire Sorting interval will be drawn accordingly.
- 4. Repeat Steps 2 and 3 to add more entire Sorting intervals to the Sorting track.
- 5. Press the Esc key on the keyboard to exit from the Sorting Builder window.

<u>Note</u>: Regardless of the thickness of the entire interval or sub-interval that you have added to the log, at least one symbol will be drawn in the middle of the interval. Be aware that if you have utilized an entire interval and you are now sub-interval on a small increment, there may be some overlapping of symbols for certain log scales.

<u>Tip</u>: With respect to **Entire Interval**: The **frequency of symbols** 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.

Deleting an Entire Interval

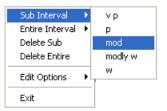
- 1. Double click on the Sorting track / layer to activate the Sorting Builder window.
- 2. Right click anywhere <u>within</u> the interval you wish to delete to activate the pop-up menu.



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

Adding a Sub-interval

- 1. Double click on the Sorting track / layer to activate the Sorting Builder window.
- 2. Right click anywhere within the Sorting track / layer to activate the pop-up menu and click on Sub Interval and then select a degree of Sorting from the ensuing pop-out menu.



3. Click and drag the mouse on the track / layer over the desired subinterval. Or If you just click your mouse on the track / layer a subinterval of whatever was selected in step 2 will be added to the layer / track at the depth you clicked at. The subinterval size is defaulted to the screen scale accuracy setting. The Sorting sub-interval will be drawn accordingly.

<u>Note</u>: Regardless of the thickness of the entire interval or sub-interval that you have added to the log, **at least one** symbol will be drawn in the middle of the interval. Be aware that if you have utilized an entire interval and you are now sub-interval on a small increment, there may be some overlapping of symbols for certain log scales.

4. Repeat Steps 2 - 3 to add more Sorting sub-intervals to the Sorting track.

<u>Note</u>: If you are only using sub-intervals (without the use of any entire intervals) and you wish to have **only one** symbol on the log (for each click), the sub-interval thickness (or increment), should be equal to or less than 0.25m and the symbol frequency (in the **Systems Options** window under **Options** on the application menu bar), should be 1 symbol every 2 meters or greater, for any log scale.

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

Deleting a Sub-Interval

- 1. Double click on the Sorting track / layer to activate the Sorting Builder window.
- 2. Right click anywhere within the sub-interval you wish to delete to activate the pop-up menu.



- 3. Click on Delete Sub and the Sorting sub-interval will be deleted accordingly.
- 4. Repeat Steps 2 and 3 to delete more Sorting sub-intervals from the Sorting track.
- 5. Press the Esc key on the keyboard to exit from the Sorting 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 **Sorting** layer are shown below. To access this window, click on the **Layer Configuration button** on the **Toolbar**, when the **Sorting** layer is active.

Active Layer Configuration [Sorting]	
Layer - Display Settings Curve Definitions Layer Sc.	ales Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo Name: Sorting ✓ 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 Scale Change Line Indicator □ Display scales on non-active layers □ Display Full Logarithmic Scale □ Display Depth-Axis Grid □ Display Data-Axis Grid	Data Type: Sorting
	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.

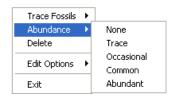
1. **Double click** on the **Trace Fossils** track / layer to activate the **Trace Fossils Selection** window. The toolbox can be turned on or off by clicking on the **Toolbox** button in the builder.

	Toolbox 🔀
Trace Fossil Selection	Favorite List An Ar As At Au Be C C Cb Cf Cg
Ar Ar [Arenicolites] Abundance Occasional	Ch Cl Cp Cs D
Top: 110.24 Base: 110.76 I Dbl Click Interval Entry Image: Image: Image: Image: Image: Image: Image: Image:	Ea En Esc 💌

2. Right click anywhere on the Trace Fossils track / layer to activate the pop-up menu.

Trace Fossils	×	Ar	Arenicolites
Abundance	۲	As	Asterosoma
Delete		С	Cruziana
Edit Options	•	G	Gyrolithes
Edic Options		N	Nereites
Exit		0	Ophiomorpha
3		Р	Planolites
		s	Skolithos
		Te	Teichichnus
		z	Zoophycos

- 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 **Dol 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 Same 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 - 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

1. Double click on the Trace Fossil track / layer to activate the Trace Fossil Builder window.

Mouse Pointer Method

- 2. Click on the symbol you wish to resize. If done correctly it will indicate with the resize boxes.
- Press the Ctrl key down on the keypad and move the mouse pointer over the interval ends and then Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into resize cursor 1.
- 4. Release the mouse button and the 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 the 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 Trace Fossils track / layer to activate the Trace Fossils selection window.
- 2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
- 3. Hold the CTRL Key down and Click and drag the interval to a new position. Your cursor will turn into a 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		
Top: 110.24 Base: 110.76		
Edit Favorites Toolbox Save Exit		

2. Right click anywhere within 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 Snap To Nearest
Edit Favorites Toolbox	Save

- 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 Mult	iple Delete 🛛
Delete these S	ymbols?
Yes	No

- 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
settings for the Trace Possits layer are shown below. To access this window, Click of the Layer configuration
button on the Toolbar, when the Trace Fossils layer is active.

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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 Fossils ✓ Display Layer Name or Curve Scale on Track ✓ Show Layer on Track ✓ Display Vertical Orientation (Layer Name) Display Backup scales Display Scale Change Line Indicator Display Scales on non-active layers Display Pull Logarithmic Scale Display Depth-Axis Grid	Data Type: Trace Fossils NBR UWI Foreground Color: black Depth Offset: Display Scale Placements Every Start at:
	OK Cancel Help

Chapter Nine - Database Navigational Tools

When you are accessing information within various windows, you have the option of navigating through the current database and editing the contents of the records stored within. This is accomplished through the use of a set of buttons located in the top left corner of each window.

The Editing and Database Navigational Tools look like this:



Note that these buttons only exist in Table based windows (areas where you are able to access and input records).

The Editing and Database Navigational Tools

<u>S</u> ave	Save (or press ALT-S)	
Undo	Undo	
<u>N</u> ew	New (or press ALT-N)	
Del	Delete	
First	Move to First Record	
Prev	Move to Previous Record	
?	Query	
S?	•	
Next	Start Query	
	Move to Next Record	
Last	Move to Last Record	

Save (ALT-S)

The button (or ALT-S) will save all new information that you have entered into the current database record.

In order for any information placed in a window to be added to the database, you must **click** on the **button or press ALT-S** prior to exiting from the given window. Otherwise, all of your changes will be lost or

ignored. Once the **Save** button or ALT-S is used, all of the information in a given window is added to the database.

When saving a record, **Power*Log / Core & Curve** performs validation checks to verify the integrity of the record information. If your record has been saved successfully, the result will be a **shortcut options** window shown below. If there are errors in the data you have entered, e.g. mandatory fields left blank or too many characters in a field, you will be prompted to make corrections to the offending field(s): the offending field will be highlighted and the problem with the invalid field will be displayed on the **Status Bar** in

the main **Power*Log / Core & Curve** window. Once you have made the corrections, **click** on the **Save button or press ALT-S** again to save your changes.

Note: The button only saves information that you have just entered into the window, when you used this button. It does not save the entire log. In fact, it is not necessary to save an entire log, since Power*Log / Core & Curve is constantly recording changes to the log and storing them. This provides a safety feature that prevents the loss of data in the event of a system failure, i.e. power outage. If such a system failure

occurs, the only lost data will be the unsaved changes that were made to the window you were working on at
the time of the failure.
After you Save a record, the following window will pop up:
Shortcut Options X Record saved successfully. Choose one of the following shortcuts. X
necola saved successituity. Choose one of the following shoricals.
Start New Record Move to Next Record Exit Cancel
Start New Record This option will clear the fields in the current window and prepare it for entering a new record.
Move to Next Record This option will move you one record ahead from your current record you just saved.
Exit
Cancel
This option will return you to the window you were working in without moving the record.
Undo
The button will restore the record data to the state of the last saved record. If you are making changes to a record and you decide that you want to abandon the changes, simply click
on the button and the record will be restored to its state prior to the last save.
New (ALT-N)
New
The button allows you to add a new record to the associated table in the database.
Adding a New Record
Whenever you see the button , you have the ability to add a new record to the database.
 Click on the button or press ALT-N and the window will be cleared or set to default values. Enter your new data into the appropriate fields in the given window. Note that some fields are mandatory, while others are optional. The mandatory fields are utilized by Power*Log / Core & Curve to recognize particular records in a table. For example, in the Sample Description Report window, the Interval and Rock Type fields are mandatory. They must have data in them before they can be stored in the database.
3. After your data is entered, click on the Save button or press ALT-S . This will store your new record permanently in the database.
Note: If you have not completed the mandatory fields, your record will not be saved. Instead, the Status Bar
will inform you that a mandatory field is blank or improperly completed and the cursor will move to the
offending field. If this happens, fill in the mandatory field properly, and then click on the button or press ALT-S again.
Delete

The Delete button deletes the current database record.
Before you click on the Delete button, be sure that the record you wish to delete is currently
displayed in the window. After the Delete button is pressed, a window appears to confirm the deletion. Once deleted, a record is <u>permanently</u> removed from the database.

<u>Important Note</u>: If you delete a PARENT RECORD, each of its DEPENDENT RECORDS are deleted as well. For example, if you delete a **Well Test Record**, its associated **Test Periods** will also be removed. Moreover, if you delete a **Well**, every record within that **Well** will be deleted as well.

Move to First Record

The Record button will move you to the first record in the database table or the first record in a queried set.

Move to Previous Record

The Previous Record button shifts you back to the previous record in the database table.

Query

The Query button allows you to search for a database record, based on specific query information.

The objective of the **Query** function is to provide access to specific records without scrolling through every record in the database. This is similar to a "search" function, where you enter a query and the database displays the records that match the query criteria.

Note: The above process is not available in all of the Power*Log / Core & Curve windows.

Querying the Database Table...

1. Click on the 2 Query button and it will transform into the S? Start Query button.

<u>Note</u>: The primary key fields in the **Sample Description**, **Core Description**, and **Sample/Core Description Transfer** windows will turn a red color, when you **click** on the **Query button**.

- 2. **Click** in the primary key field to place a flashing cursor in the primary key field.
- 3. Type in a depth, number, or name, depending on the record set that you are attempting to query.
- 4. Click on the S? Start Query button to refresh the window with the first record in the query result.
- 5. Use the **Next Record button** to view the other records that satisfy the query.

Retrieving All Records from the Database Table...

Clicking twice on the Query button will refresh the window with all the records from the table starting with the very first record of the database table and allow the user to scroll through each successive record,

using the **Next** Record button.

Move to Next Record



Record button advances you to the next record in the database table.

Move to Last Record

The Last Record button can advance you to the final record in the database table.

Chapter Ten - Curves Adding Curves

The user can add curves to your well / log at any time. The curves can either be logarithmic or linear. They can display data as curves or points or histograms. They have all the functionalities that a user could ask for. Investigation into this chapter is a must if you want to be a sophisticated user.

Adding a Curve Layer

1. Click on Log Configuration Builder, under the Options menu

selection, or use the Log Configuration Builder button on the Toolbar to activate the Log Configuration Builder window shown below:

Options

Refresh Window
Refresh Data
Geology Dictionary
Curve Maintenance
Log Configuration Builder
Sample / Core Description Transfer
Master Survey Group
Shift Data
Lithology Integrity Check
Use Default Printer Settings
Sidetrack
Unwrap LAS
System Options

Log Configuration Builder Available Logs Active Log Log: ABC Oil Anywhere 12-25 Normal 💌 Log... SYSTEM • Log Config. C Tracks Track Config. Tracks Add All >>> Casing ~ 2.20 Drilling Progres: Carbonate Texture 0.15 Slide - Rotate Core Show All Y 0.84 - Lithology Core Box Data Y 0.30 Depth Core Density Y 0.20 Oil Shows Hide All Core Permeability Y 0.20 Porosity Type Core Porosity Y 0.50 Porosity Core Sample Code Y 0.84 Interpreted Lithology Add >>> Curve Y 0.50 Grain Size Curves Y 0.20 Sorting Curve Fill Delete Y 0.20 Rounding Date Y 1.90 Lithology Description Depth Show/Hide Log Width: 10.33 ~ Track Width: 2.2 ~ Move Layer Config. Eayers Eayers Casing Data (ABC Oil 12-25) Core Rate Formation (ABC Oil 12-25) ^ Gas Annotations1 (ABC Oil 12-25) Curve Deep Induction Gamma Ray (ABC Oil 12-25) Directional Survey (ABC Oil 12-25) Density Porosity Drill Rate Drill Rate (Rotating) (ABC Oil 12-25) (ABC Oil 12-2 Gamma Ray Drill Rate (Orienting) Hole Size Total Gas (ABC Oil 12-25) (ABC Oil 12-25) IC4 (Iso Butane) TVD. ¥ Exit (ABC Dil 12-2 🎽 Eng - Mud Parameters IC5 (Iso Pentane)

<u>Note</u>: The Log Configuration Builder window is divided into two sections: the <u>left</u> side displays the available logs with its associated tracks and layers and the <u>right</u> side displays the tracks and layers that are currently in the active log.

2. Click on the **Log...** button to activate the Log Format List window and then select an available SYSTEM log or template from which to take a **Curve** layer.

<u>Note</u>: The best choice is the **SYSTEM** [SYSTEM] log or template, because it contains a **Curves** track that is useful for most curve applications.

- Double click on the SYSTEM [SYSTEM] log or template from the Log Format List window and all of the SYSTEM [SYSTEM] log/template tracks will be displayed on the <u>left</u> side of the Log Configuration Builder window.
- 4. Click on the Curves track to highlight it and a number of Curve layers will be displayed in the Layers section on the left side of the window.
- 5. On the <u>right</u> side of the **Log Configuration Builder** window, **click** on the track that you wish to add the selected **Curve** layer to and the track will then be highlighted.
- 6. Click on (highlight) one of the Curve layers in the Layers section list on the left side of the Log Configuration Builder window.
- Click on the Add>>>> button in the middle of the Log Configuration Builder window to add the selected Curve layer to one of your tracks and you will receive the following system message, "Do you want to ADD the selected <LAYER> from the available log to the active log?"
- 8. Click on the <u>Ves</u> button to activate the Get Name window, type in the name of your new curve, and click on the <u>OK</u> button.
- 9. Click on the **button** to return to the main log and you will receive an **Add Curve** window, like the one shown below:

Adding a Curve to the New Curve Layer (Linear)

Add Curve			×
UWI / API: test			
Curve Heading			
Name: Gamma Ray	Curve Units:	gapi	•
Depth Units: 🔳 💌	Null Value:	-999.25	
Curve Scale			
Use 0 to 0 for the whole interval: 0.00 to 0.00	og) (Left / Scale: 0.00	Bottom) (Right 000 <mark>to</mark> 150.0	
Backup Scale: straight shift 💌	Grid Type:	inear 💌	
		OK C	ancel

The window displayed above allows you to adjust the properties of the **Curve** that is being associated with the layer.

- 1. Select a value for the Curve Units field from the Curve Units field drop box or type in your own value.
- 2. Set the **Null Value** to an appropriate number. The **Null Value** is a numeric value that symbolizes "**No Data**" for a particular depth point. If you have no data for a particular depth, then type in the **Null Value** for that depth and the program will read it as a 'zero' value: not attempt to draw a line to that data point.
- 3. Enter values into the **Interval** (From) and **Interval** (To) fields that are relevant to the curve. Otherwise, these fields default to zero (**0**), as a numerical representation of the entire log.
- 4. Enter appropriate values into the Scale (Left) and Scale (Right) fields. A typical Linear scale is from 0 to 150 or 0 to 100.
- 5. Select an appropriate **Backup Scale** to define what will be drawn if the curve values are outside of the curve's scale.

Backup Scale:	straight shift	-
	straight shift	~
	scale cutoff	
	x1	
	x2	_
	×3	
	× 4	
	×5	
	x 10	-
	lx 20	×.

- Strait Shift- If the original scale is (left) scale is 0 and the (right) scale is 20 the backup scale will be 20 to 40 if the curves goes off scale to the right and negative (-) 20 to 0 if the curve goes off scale to the left.
- Scale Cutoff If the curve goes off scale in any direction, the curve will not be drawn and appears to be a null value.
- x1- If the curve goes off scale in any direction, the curve will peg either to the left or right side and will not return until the values for the curve fit in the curve scale applied to that interval.
- x2 If the original scale is (left) scale is 0 and the (right) scale is 20 the backup scale will be 0 to 40 if the curves goes off scale to the right and negative (-) 40 to 0 if the curve goes off scale to the left.
- **x3** - If the original scale is (left) scale is 0 and the (right) scale is 20 the backup scale will be 0 to 60 if the curves goes off scale to the right and negative (-) 60 to 0 if the curve goes off scale to the left.
- Etc. etc. etc.
- 6. Click on the **DK** button, when you have finished and the curve will be added to your log accordingly.

Note: The Movable Grid, in the Layers Organizer window, is applicable to any Curve layer on your log.

To customize your curve (grid types, curve colors, etc...), you must make the curve the active layer in the log and

then click on Layer Configuration, under the Edit menu selection, or click on the Layer Configuration button on the Toolbar.

Note: You are able to add curves from several other places as well: the

Curves button in the Edit Well window,

the **Curves** button in the Curve Maintenance window, or the **Definitions Tab** window. All of these methods will activate the **Digital Curve** window shown below:

Digital Curve	×
Save Undo New Del First Prev ? Next Last Scale	
Name Gamma Ray	
Units: gapi	
Depth Units: m	
Null Value: -999.25	
Remark:	

Adding a New Curve

- 1. Click on the **button or press ALT-N** in the Digital Curve window to prepare it for the entry of a new record.
- 2. **Type a name** for the new curve into the **Name** field or **click** on the **Name**... **button** to activate the **Curve List** window from which to select an existing name.
- 3. Select a unit from the Units field drop box or type in your own unit, if the Units are not available in the drop list.
- 4. Select an appropriate value from the **Depth Units** field drop box.
- 5. Type in a **Null Value** to be used when there is no value for a particular depth.
- 6. Fill in any applicable remarks, **click** on the ensuing **Shortcut Options** window.
 - Click on the

7.

Scale button to activate the Curve Scale window shown below.

Curve Scale			
Save Undo New Del from	First Prev	? Next Last Left / Bottom	Right / Top
Depth Interval	0	Scale: 0	150
Backup Scale: straight sh	ift 👤		

8. Enter appropriate values into the Interval (From) and Interval (To) fields.

Ba

Note: Interval values of 0 to 0 represents the depth interval for the curve scale will be the entire log.

- 9. Enter appropriate values into the and **Scale** Left and **Scale** Right fields for a vertical log and a **Scale** bottom and **Scale** top fields for a horizontal log, which will determine the plotting of the curve values.
- 10. Select a **Backup Scale type** from the **Backup Scale** field drop box that will accommodate curve data values that exceed the **Scale** settings.

ickup Scale:	straight shift	-
	straight shift scale cutoff	~
	scale cutoff	
	x1	
	x2	
	×2 ×3	
	× 4	
	x5	
	x 10	
	x 20	\sim

- 11. Click on the **Save** button or press ALT-S and then on the **Exit** button out of the ensuing Shortcut Options window, when you are finished.
- 12. Press the Esc key on the keyboard twice to exit from the Curve Scale and Digital Curve windows.

<u>Note</u>: Once the curve is added to the curves list, you cannot access the curve for adding, editing, or viewing purposes, until the curve is associated with a layer. You must use the **Log Configuration Builder – Curve Definition Tab** window to associate this new curve with a layer. The only layer you may use is a **Curve Type** layer.

Field Restriction Tables:

Digital Curve

Name	30	Character	Mandatory
Units	12	Character	Mandatory
Depth Units	12	Character	Mandatory
Null Value	10.5	Numeric	Optional
Remark	50	Character	Optional

Curve Scale

Top Depth	5.5	Numeric	Mandatory
Bottom Depth	5.5	Numeric	Optional
Left	10.5	Numeric	Optional
Right	10.5	Numeric	Optional
Backup Scale	12	Character	Optional

<u>Note</u>: When you add a layer, it is associated with a **Data Type**. Every type of layer in **Power*Log / Core & Curve** has a data layer classification, so that the system knows what default settings to use when adding the layer to the log. To access this window, **click** on the **Layer Configuration button** on the **Toolbar**, when the **Curve** layer is active.

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

Active Layer Configuration [Gamma Ray]	E Constantino de Cons
Layer - Display Settings Curve Definitions Layer Scal	les Data Group IDs Formation and Age Display Dip Meter Definitions
Save Undo	
Curve List Button Gamma Ray Edit Curve Attributes	
Width:	
Pattern: Solid	
Style: black	
Color: Point Indicator:	
	OK Cancel Help
Active Layer Configuration [Gamma Ray]	
Layer - Display Settings Curve Definitions Layer Scal	les Data Group IDs Formation and Age Display Dip Meter Definitions
Layer - Display Settings Curve Definitions Layer Scal	les Data Group IDs Formation and Age Display Dip Meter Definitions
Layer - Display Settings Curve Definitions Layer Scal Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left: Right:	les Data Group IDs Formation and Age Display Dip Meter Definitions
Layer - Display Settings Curve Definitions Layer Scal Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left: Right:	les Data Group IDs Formation and Age Display Dip Meter Definitions
Layer - Display Settings Curve Definitions Layer Scal Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left: Right	les Data Group IDs Formation and Age Display Dip Meter Definitions Meter Scale Depth-Axis Grid
Layer - Display Settings Curve Definitions Layer Scal Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left: Right: Verbal Settings Grain Size Scales	Ies Data Group IDs Formation and Age Display Dip Meter Definitions Meter Scale Depth-Axis Grid Style: Full Data-Axis Grid Data-Axis Grid
Layer - Display Settings Curve Definitions Layer Scal Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left: Right: Verbal Settings Grain Size Scales v to	Ies Data Group IDs Formation and Age Display Dip Meter Definitions Meter Scale
Layer - Display Settings Curve Definitions Layer Scale Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left: Right: Verbal Settings Grain Size Scales Carbonte Texture Scales to Dip Meter Quality Scale Range	Ies Data Group IDs Formation and Age Display Dip Meter Definitions Meter Scale Depth-Axis Grid Style: Full Data-Axis Grid Type: Linear Units: Linear Cycles
Layer - Display Settings Curve Definitions Layer Scall Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left: Right: Verbal Settings Grain Size Scales to Carbonte Texture Scales	Ies Data Group IDs Formation and Age Display Dip Meter Definitions Meter Scale Depth-Axis Grid Style: Full Data-Axis Grid Type: Linear Units:
Layer - Display Settings Curve Definitions Layer Scale Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left: Right: Verbal Settings Grain Size Scales Carbonte Texture Scales to Dip Meter Quality Scale Range	les Data Group IDs Formation and Age Display Dip Meter Definitions Meter Scale
Layer - Display Settings Curve Definitions Layer Scal Save Undo Porosity Grade Scale Percent Layer Scale Dip M Grain Size Scale Carbonate Texture Scale Left Right Verbal Settings Grain Size Scales Carbonte Texture Scales to Dip Meter Quality Scale Range From: 0 To: 1	les Data Group IDs Formation and Age Display Dip Meter Definitions Meter Scale Depth-Axis Grid Style: Full Data-Axis Grid Type: Linear Units: Linear Cycles Major Minor Increment 2 10

Adding a Curve to the New Curve Layer (Logarithmic)

Add Curve 🔀
UWI / API: test Curve Heading
Name: LWD Deep Induction Curve Units: ohmm Depth Units: m Null Value: 1.00000
Curve Scale Use 0 to 0 for the whole log) (Left / Bottom) Depth 0.00 to Interval: 0.00 to Backup Scale: straight shift Grid Type:
OK Cancel

The window displayed above allows you to adjust the properties of the Curve that is being associated with the layer.

- 1. Select a value for the Curve Units field from the Curve Units field drop box or type in your own value.
- 2. Set the **Null Value** to an appropriate number. The **Null Value** is a numeric value that symbolizes "**No Data**" for a particular depth point. If you have no data for a particular depth, then type in the **Null Value** for that depth and the program will read it as a 'zero' value: not attempt to draw a line to that data point.
- 3. Enter values into the **Interval** (From) and **Interval** (To) fields that are relevant to the curve. Otherwise, these fields default to zero (**0**), as a numerical representation of the entire log.
- 4. Enter appropriate values into the Scale (Left) and Scale (Right) fields. A typical logarithmic scale is from .1 to 10000 or can now also be a hybrid logarithmic scale such as 0.2 to 2000.
- 5. Select any **Backup Scale** which is mandatory but is irrelevant as there is no backup scale on a logarithmic curves.
- 6. Click on the button, when you have finished and the curve will be added to your log accordingly.

Note: The Movable Grid, in the Layers Organizer window, is applicable to any Curve layer on your log.

To customize your curve (grid types, curve colors, etc...), you must make the curve the active layer in the log and

then click on Layer Configuration, under the Edit menu selection, or click on the Layer Configuration button on the Toolbar.

Note: You are able to add curves from several other places as well: the **Curves** button in the Edit Well window,

the **Curves** button in the Curve Maintenance window, or the **Curves** button in the Layer Configuration – Curve Definitions Tab window. All of these methods will activate the Digital Curve window shown below:

<u>Note</u>: Once the curve is added to the curves list, you cannot access the curve for adding, editing, or viewing purposes, until the curve is associated with a layer. You must use the **Log Configuration Builder – Curve Definition Tab** window to associate this new curve with a layer. The only layer you may use is a **Curve Type** layer.

Field Restriction Tables:

Digital Curve

Name	30	Character	Mandatory
------	----	-----------	-----------

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Units	12	Character	Mandatory
Depth Units	12	Character	Mandatory
Null Value	10.5	Numeric	Optional
Remark	50	Character	Optional

Curve Scale

Top Depth	5.5	Numeric	Mandatory
Bottom Depth	5.5	Numeric	Optional
Left	10.5	Numeric	Optional
Right	10.5	Numeric	Optional
Backup Scale	12	Character	Optional

Note: When you add a layer, it is associated with a **Data Type**. Every type of layer in **Power*Log / Core & Curve** has a data layer classification, so that the system knows what default settings to use when adding the layer to the log. To access this window, **click** on the **Layer Configuration button** on the **Toolbar**, when the **Curve** layer is active.

Active Layer Configuration [LWD Deep Induction]						
	uction] Image: Curve Im					
	OK Cancel Help					

Active Layer Config	uration [LWD Deep Induction]]	X
Layer - Display Setting	S Curve Definitions Layer Scales Dat	a Group IDs Formation and Age	Display Dip Meter Definitions
Save Undo			
Curve List Button	LWD Deep Induction		
	Edit Curve Attributes		
Width:	3		
Pattern:	PtoP		
Style:	Dot 💌		
Color:	green 🔽		
Point Indicator:	,		
		OK	Cancel Help
	uration [LWD Deep Induction]		> >
	uration [LWD Deep Induction s Curve Definitions Layer Scales Dat		2
			2
Layer - Display Setting Save Undo Porosity Grade Scale	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc	a Group IDs Formation and Age	2
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale	a Group IDs Formation and Age	> >
Layer - Display Setting Save Undo Porosity Grade Scale	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc	a Group IDs Formation and Age	Display Dip Meter Definitions
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left:	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale	a Group IDs Formation and Age	Display Dip Meter Definitions
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale Right: to	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full Data-Axis Grid
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings Grain Size Scales	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale Right:	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full Data-Axis Grid Type: Logarithmic
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings Grain Size Scales Carbonte Texture Sc Dip Meter Quality S	S Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale Right to sales to cale Range	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full Data-Axis Grid Type: Logarithmic Units: Linear Cycles
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings Grain Size Scales Carbonte Texture Sc	S Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale Right: to to to	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full Data-Axis Grid Type: Logarithmic Units:
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings Grain Size Scales Carbonte Texture Sc Dip Meter Quality S	S Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale Right to sales to cale Range	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full Data-Axis Grid Type: Logarithmic Units: Linear Cycles
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings Grain Size Scales Carbonte Texture Sc Dip Meter Quality S From: 0	S Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale Right to sales to cale Range	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full Data-Axis Grid Type: Logarithmic Units: Linear Cycles
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings Grain Size Scales Carbonte Texture Sc Dip Meter Quality S From: 0	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale Right to to to cale Range To: 1	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full Data-Axis Grid Type: Logarithmic Linear Cycles Major Minor Increment
Layer - Display Setting Save Undo Porosity Grade Scale Grain Size Scale Left: Verbal Settings Grain Size Scales Carbonte Texture Sc Dip Meter Quality S From: 0	s Curve Definitions Layer Scales Dat Percent Layer Scale Dip Meter Sc Carbonate Texture Scale Right to to to cale Range To: 1	a Group IDs Formation and Age	Display Dip Meter Definitions Depth-Axis Grid Style: Full Data-Axis Grid Type: Logarithmic Linear Cycles Major Minor Increment

Editing or Adding Values to Curves

The following steps will show you how to edit curves and add values to an existing curve layer.

To access the **Curve Editor** window, make the curve layer that you wish to edit, the active layer within an active track (see **Layers Organizer** or **Layer Selection List**). Then, **double click** on the layer to activate the curve layer's **Curve Editor** window shown below:

с	urve ID: GA	MMA RAY / I	NULL: -9	99.25
	Measured 147.16 147.31 147.46	Value -999.25000 27.52000 -999.25000	<u>^</u>	Auto. Inc.
	147.62 147.77 147.92 148.07	23.04000 -999.25000 21.76000 -999.25000		Value 150.06 14.50000
	148.23 148.38 148.53 148.68 148.84	16.64000 14.72000 -999.25000 18.56000 17.28000		Enter Delete Range Entry From Depth To Depth
	148.99 149.14 149.29 149.45 149.60 149.75	-999.25000 17.92000 15.00000 16.00000 16.00000 15.50000		New 'From' Depth
	149.70 149.90 150.06 150.21 150.36 150.51	16.0000 14.50000 14.50000 15.00000 15.00000		
	150.67 150.82 150.97 151.12 151.27 151.43	14.00000 14.00000 14.00000 16.50000 16.50000		Curve Scales Save Exit
	101.43	16.50000	×	EXI

The **Ignore Nulls** check box when activated draws a continuous curve in the pattern predefined in the Curve Layer. When it is deactivated the curve will be a discontinuous curve if there are any null values associated with the curve data.

How to Add values to a Curve from the Curve Editor window.

- 1. To access the Curve Editor window, make the curve layer that you wish to edit, the active layer within an active track (see Layers Organizer or Layer Selection List).
- 2. Double click on the layer to activate the curve layer's Curve Editor window shown above.
- If you wish to go to a specific depth in the list, **click** on the thumb and drag it or you can also search for a depth 3. by simply scrolling down the list.
- 4. Set the Auto increment field to the depth increment for the curve values you are entering. This will then automatically increment the depth entered by this value when you enter the value.
- 5. Type in a depth in the depth field and then tab to the value field and type in a value.
- Enter **button** when done and the depth / value will 6. Press the Enter key on your keypad or click on the be entered into the list, resulting in the depth being advanced by the number specified in the Auto Depth Increment field.
- 7. Type in a new value for the corresponding depth and either Press the Enter key on your keypad or click on the Enter button.

N.B. *If the number in the Value field is the same as the previous number, then just press Enter key on your
keypad and the program will advance it for you automatically, thereby preventing you from having to re-enter the
same number into the Value field twice.

Save

- 8. When you are finished entering your data **click** on the
 - $|\mathbf{X}|$ Exit Then either **click** on the

button or click on the to close the window.

button.

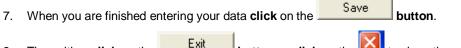
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9.

If you have no values for specific depths, you must enter the **Null Value** for the curve, which is displayed in the Header Portion of the window. The **Null Value** is a numeric value that symbolizes **No Data** for a particular depth point. If you have no data for a particular depth, type in the **Null Value** for that depth and your curve will not be drawn for that portion.

How to Edit a value in the list from the Curve Editor window.

- 1. To access the **Curve Editor** window, make the curve layer that you wish to edit, the active layer within an active track (see **Layers Organizer** or **Layer Selection List**).
- 2. Double click on the layer to activate the curve layer's Curve Editor window shown above.
- 3. If you wish to go to a specific depth in the list, **click** on the thumb and drag it or you can also search for a depth by simply scrolling down the list.
- 4. To edit a value given to a specific depth, Click on the depth / value to place it in the single entry fields.
- 5. Click in the Value field and type in the new value you wish to assign to the depth.
- 6. Press the **Enter** key on your keypad or **click** on the **Enter button** when done and the depth / value will be entered into the list, resulting in the depth being advanced by the number specified in the **Auto Depth Increment** field.



8. Then either **click** on the

button or click on the </u> to close the window.

Curv	ve ID: GA	MMA RAY /	NULL: -9	999.25		×
M 50 50 50	easured 10.42 10.58 10.73 10.88	Value 19.84000 20.16000 21.76000 20.16000		Auto. Inc. 1 Single Entry-	☑ Ignore NULL	
50 50 50 50	11.03 11.19 11.34 11.49 11.64	20.48000 20.80000 20.91000 19.20000 18.88000		Enter	Value Delete	
50 50 50 50	11.79 11.95 12.10 12.25 12.40	19.20000 17.92000 19.63000 19.20000 19.20000		Range Entry- From Depth	To Depth	
50 50 50 50	12.56 12.71 13.17 13.32 13.62	19.52000 17.28000 17.28000 17.28000 17.28000		New 'From' [175.35]	1	
50 50 50 50	13.93 14.23 14.54 14.69 15.69 16.69	19.84000 19.20000 18.56000 -999.25000 -999.25000 -999.25000				1
50 50 50	16.69 17.69 18.69 19.69 0.00	-999.25000 -999.25000 -999.25000 -999.25000 17.28000	-		Curve Scale Save Exit	

How to Shift values from the Curve Editor window.

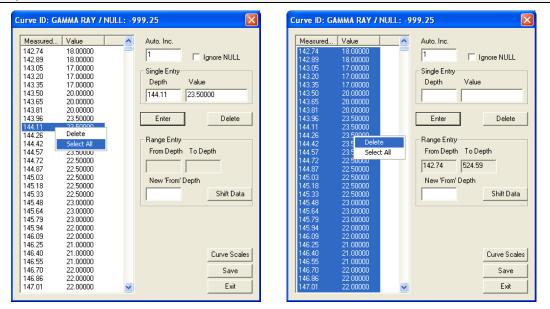
- 1. To access the **Curve Editor** window, make the curve layer that you wish to edit, the active layer within an active track (see **Layers Organizer** or **Layer Selection List**).
- 2. Double click on the layer to activate the curve layer's Curve Editor Window shown above.

- 3. To enter the depth range for the interval of the curve that requires shifting the user must first **click** on the **top value** in the list. Then scroll down to the last value that needs to be shifted and hold the **SHIFT key down** on your keypad and **click** on the last value. This will fill in the From Depth and To Depth fields.
- 4. Then, **type** in the New from depth to where this portion of curve will be placed and then **click** on

the button . This will activate	e a system mess	sage.
--	-----------------	-------

		System Message
		About to Shift curve values, are you sure you want to proceed?
		Yes No Cancel
5.	Click on the Yes	button.
6.	Then click on the	button and then click on the Exit button.

<u>Note</u>: When you shift portions of curves, anything that existed at the "*New From Depth*" value will be overwritten. The example above shifts the curve data down 32.



How to delete values in the Curve Editor window.

1. To delete a single value depth and its assigned value, highlight it on the list and then click on the

Delete button or right click on the value in the list and select delete.



2. The user has the ability now to delete multiple values at once by highlighting specific values by utilizing the

CTRL key and clicking on the specific depth / value rows in the list. Then **click** on the **Delete Delete button** or **right click** on the value in the list and **select delete** from the pop out menu.

3. The user has the ability now to delete a range of values at once by highlighting a specific value by utilizing the

SHIFT key and clicking on the specific depth / value rows in the list. Then **click** on the **Delete Delete button** or **right click** on the value in the list and select delete from the pop out menu.

- 4. The user has the ability now to delete all the values at once by right clicking on the list of values and selecting the select all to highlight all the values. Then click on the value in the list and select delete from the pop out menu.
- 5. When you are finished editing or adding to your curve, **click** on the **Save button** and then **click** on the **Exit button**

Curve Layer

Digital Curve Pop-Out Menu

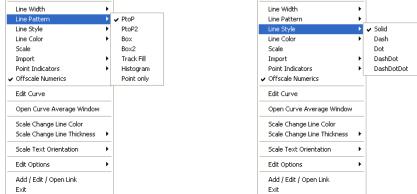
The digital curve pop-out menu can be accessed if the user right clicks on an active curve layer on a log. The user can see an example of a digital curve pop-out menu. The Curve Name is displayed in the upper portion of the pop-out menu

Gamma Ray]
Line Width	►	1
Line Pattern	•	2
Line Style	•	√ 3
Line Color	•	4
Scale		5
Import	• "	
Point Indicators	۲	
 Offscale Numerics 		
Edit Curve		
Open Curve Average Window		
Scale Change Line Color		
Scale Change Line Thickness	•	
Scale Text Orientation	۲	
Edit Options	×	
Add / Edit / Open Link Exit		

The <u>Line Width</u> Selection indicates the width of the curve in pixels. To change the line width, **right click** on an active curve layer, move the mouse pointer over the Line Width selection and clicking on a new width. The right click menu options are limited to 5 pixels. If you wish to get a thicker line you must go into the layer configuration window and type in a new line width between 1 and 9

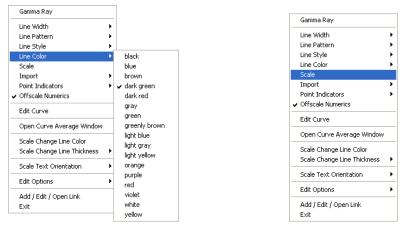
The <u>Line Pattern</u> Selection indicates the pattern of the curve. To change the line pattern, **right click** on an active curve layer, move the mouse pointer over the Line Pattern selection and **click** on a new line pattern

/er, move ti	ne mou	se pointer ov	er the Line	e Pattern selectior	n and click on a	new	line paπe	rn
PtoP		point to poin	pint curve (stop curve at null values)					
PtoP2		point to point curve (disregard null values [continuous curve])						
Box	Box histogram or box curve (stop curve at null values)							
Box2		histogram or	r box curve	e (disregard null v	alues [continuou	s cu	rve])	
Track Fill		fills track wit	h color de	termined in the pg	eology32.ini			
Histogram		draws a colo	ored histog	gram the width of t	he line width from	m th	e data poi	nt back to the
		lowest value	track edg	e.				
Points Onl	у	shows only t	the data p	oints and defaults	to circles if noth	ing c	defined in t	the
		point indicat	or portion	of curve definition	S			
	Gamma Ra	W			Gamma Ray			
	Line Width	•			Line Width	+		
	Line Patter	rn 🕨	✓ PtoP		Line Pattern	- + _		_
					1 A A A A A A A A A A A A A A A A A A A			



The <u>Line Style</u> Selection indicates the associated with the curve. This field is changed by right clicking on an active curve layer, moving the mouse pointer over the Line Style selection and clicking on a new Selection.

The <u>Line Color</u> Selection indicates the line color associated with the curve. To change the line color **right click** on an active curve layer, move the mouse pointer over the Line Color selection and **click** on a new line color.



The <u>Scale</u> Selection enables the user to get quickly at the curve scales for the active curve. Then, the user can change, add or delete existing scales in the Curve Scales window.

Curve Scale			×
Save Undo New Del	First Prev	? Next Last	
from	to	Left / Bottom	Right / Top
Depth Interval	0	Scale: 0	150
Backup Scale: straight :	shift 💌		

Notice that the **Depth Interval** (From) and **Interval** (To) values, respectively, have defaulted to "**0**" to "**0**" with the **Scale** (Left), **Scale** (Right), and **Backup Scale** defaulting to the values last entered by the user. An interval of 0 to 0 represents the entire Depth Interval for the curve.

Editing a Curve Scale

<u>Note</u>: You can also access the **Curve Scale** window from the **Curve Editor** window, but only for the curve that is active in the editor.

- 1. **Select** the appropriate **depth interval you wish to change** by scrolling through the records using the database navigational button or click on the Depth Interval Button and selecting the appropriate depth interval by double clicking on it.
- 2. Enter a new value into the Left / Bottom and or Right / Top scale values.
- 3. Click on the **Save** button or press ALT-S and select the **Exit** button from the ensuing Shortcut Options window.

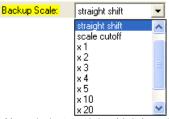
Adding a new Curve Scale

Notice that the **Depth Interval** (From) and **Interval** (To) values, respectively, have defaulted to "0" to "0"

- 1. Enter a new value into the Interval (To) field to indicate where the existing scale will stop.
- 2. Click on the **Start New Record** button from the ensuing **Shortcut Options** window.
- 3. Type a new value into the **Interval** (From) field (typically the <u>same</u> value that was entered into the <u>original</u> **Interval** (To) field to indicate where the first curve scale ended.)
- 4. Type a new value into the **Interval** (To) field, which is typically larger than the last depth on your log, to indicate where the second curve scale ends.

<u>Note:</u> Depth Intervals should never overlap or have spaces in them as the curve would either have two scales at a depth or no scale at all.

- 5. Enter the new **Scale** (Left) and **Scale** (Right) values.
- 6. Select an appropriate **Backup Scale** to define what will be drawn if the curve values are outside of the curve's scale.

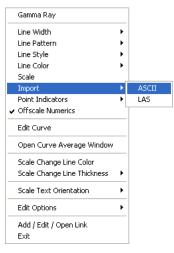


- Strait Shift- If the original scale is (left) scale is 0 and the (right) scale is 20 the backup scale will be 20 to 40 if the curves goes off scale to the right and negative (-) 20 to 0 if the curve goes off scale to the left.
- Scale Cutoff If the curve goes off scale in any direction, the curve will not be drawn and appears to be a null value.
- **x1** If the curve goes off scale in any direction, the curve will peg either to the left or right side and will not return until the values for the curve fit in the curve scale applied to that interval.
- **x2** If the original scale is (left) scale is 0 and the (right) scale is 20 the backup scale will be 0 to 40 if the curves goes off scale to the right and negative (-) 40 to 0 if the curve goes off scale to the left.
- **x3** - If the original scale is (left) scale is 0 and the (right) scale is 20 the backup scale will be 0 to 60 if the curves goes off scale to the right and negative (-) 60 to 0 if the curve goes off scale to the left.
 - Etc. etc. etc.

Save

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

The <u>Import</u> Selection enables the user to import ASCII or LAS file data directly into the curve.



Right Click ASCII Import (Single Curve)

- STEPS
 - Click on the Choose File button and select your data file.
 - Next, select your delimiter from the drop down box on the right. When the correct delimiter is chosen, the file's data columns will fill the individual column windows in the bottom. In this example, the file is space delimited.
 - In the "Select Data Columns" section, identify for the program which column is the measured depth, and identify which column of data you woud like to import.
 - 4. If you would like to replace the curve

5. Click on the

				- a second angle param				
Choose data file								
Choose File Peload File								
					Choose Delimiter			
Choose Start D	Depth	spoce 🔹						
Depth TG 1190.00000 200.00000 1191.00000 210.00000 1192.00000 205.00000								
Once the correct delimiter is selected, he data should fill separate ourves, waiting with the first Then, from the drop-down lists, choose which curve you wish to import to your track.								
			Importing	tata into curve:	Total Gas			
-Select Data C	olumns							
Column 1	Column 2	Column 3	Column 4	Column 5				
Depth 1190.00 1191.00 1192.00 1193.00 1194.00 1195.00 1196.00	TG 201.000 211.000 205.000 231.000 231.000 221.000 221.000 221.000 221.000				Measured Depth Column 1 Deta column 1			
Column 6	Column 7	Column 8	Column 9	Column 10	Replace entire curve			
					with new data 🔲			
1	1	1	1	1	IMPORT			
					Exit			

you are importing into, activate the **Replace entire curve with new data** check box **I**. Otherwise, the data will be inserted into any existing data already in that curve.

IMPORT button to begin the import process.

Note: for ASCII Directional Survey Imports please see Chapter 1 – Import Surveys

*An ASCII file is any file that contains text data in column form, separated by a delimiter such as a space, tab or comma.

Gamma Ray		
Line Width	۲	
Line Pattern	•	
Line Style	•	
Line Color	•	
Scale	_	
Import	•	ASCII
Point Indicators	•	LAS
 Offscale Numerics 		
Edit Curve		
Open Curve Average Window		
Scale Change Line Color		
Scale Change Line Thickness	×	
Scale Text Orientation	×	
Edit Options	×	
Add / Edit / Open Link Exit		

Right Click LAS Imports (Single Curve) STEPS

- 1. Click on the Select LAS File button to choose your LAS file to import. If the LAS file is of the proper format, information about the file will be displayed on the left hand side. If the LAS file is **not** the proper format, import may be possible through the ASCII import procedure.
- You may choose your own data interval to import by un-checking the check box labeled "Use File Interval" and typing in your own depths. The default uses the files interval.
- Select the curve from the LAS file you wish to

IMPORT

LAS Import	X
Select LAS File LAS Information LAS Version: 2.0 WRAP: No Data Start Depth: 1200.0000 Data Stop Depth: 1235.0000 Data Null Value: -939.2500 Curves: GAMMA_RAY.GAPI :2	Importing to curve: Gamma Ray Import START START 1200.0000 STOP 1235.0000 NULL 339.2500 IV Use File Interval Select curve to import GAMMA_RAY IVE IMPORT
	Exit

import from the drop box labeled "Select curve to import". This list will contain the names of all curves identified in the LAS file. If you would like to replace the curve you are importing into, activate the

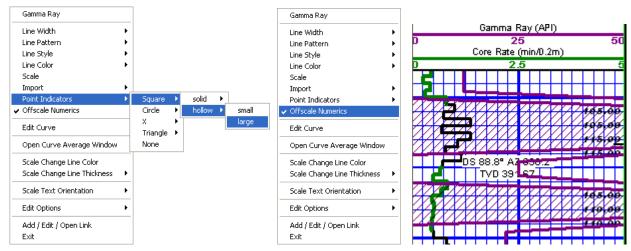
Replace existing curve check box . Otherwise, the data will be inserted into any existing data already in that curve.

Click on the

button to begin the import process.

*LAS files must be Version 2.0or 3.0 in unwrapped format.

The <u>Point Indicators</u> Selection indicates where the data points on the curve are being drawn with. This field is changed by right clicking on an active curve layer, moving the mouse pointer over the Point Indicators selection and clicking on any of the pop out menu selections. If point indicators are turned on these will also presented in the Track header.



The <u>Offscale Numerics</u> Selection allows the user to view the values of any curve that wraps itself off scale on the double wrap. These fonts can then be modified in the System options under the Font tab

The Edit Curve Selection allows the user to view and change the digital Curve attributes as well as access the scale.

Gamma Kay									
Line Width	•								
Line Pattern	•								
Line Style	•	D	igital Cı	rve	2				
Line Color	•								
Scale				1					
Import	•		Save Ur	ido] I	New Del	First Prev	- ? N	ext Last	Scale
Point Indicators	•								
 Offscale Numerics 				1	n n			_	
Edit Curve			Name		Gamma Ra	ау			
Edit Carve				_					
Open Curve Average Window			U	nits:	gapi	-			
Scale Change Line Color						_			
Scale Change Line Thickness	•		Depth U	nits:	ft	+			
			- Doparto	nco.					
Scale Text Orientation			KL-057-	l	-999.25				
Edit Options	•		Null Va	lue:	1 000.20				
· · · · · · · · · · · · · · · · · · ·			_		M ZAL				-
Add / Edit / Open Link			Ren	hark:	N/A				
Exit									

Changing Digital Curve Attributes (Units / Null Value)

You can use the Layer Configuration window to edit Curve Units, Scales, Colors, and Styles. The User can also edit the Curve attributes in the Well Window. The User can also right click on the layer and select Edit Options.

- 1. If the curve layer is active right click on the layer to activate the pop out menu and select Edit Curve.
- 2. You can now select (or type in), new units, change the null value, or add/change the remarks.
- 3. Click on the **Shortcut Options** system window.

Camma Day

Curve Average Window

The **<u>Open Curve Average Window</u>** Selection allows the user to determine the curve average, median or mode over a depth interval.

1. If the curve layer is active **right click on the layer** to activate the pop out menu and **select Open Curve Average Window.** This will activate the window shown below.

Gamma Ray					
Line Width	•				
Line Pattern	•				
Line Style	•				
Line Color	•	Curve Average		Curve Average	
Scale					
Import	•	Curve Average		Curve Average	
Point Indicators	•	Gamma Ray		Gamma Ray	
 Offscale Numerics 				[
Edit Curve				55.30757	
Open Curve Average Window	,	Top Depth	Base Depth	Top Depth	Base Depth
Scale Change Line Color				9073.00	9261.00
Scale Change Line Thickness	•				
Scale Text Orientation	•	• Average C Med	ian C Mode	O Average O	Median C Mode
Edit Options	•		II		
Add / Edit / Open Link Exit		Calculate Clear	Exit	Calculate	Clear Exit

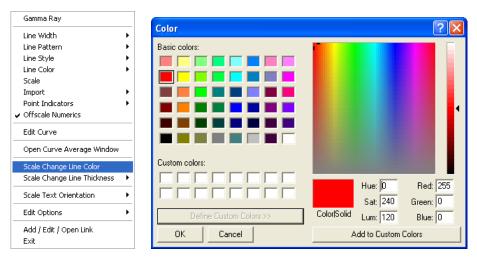
- 2. Click on the appropriate radio button Average Median Mode to determine what you want to calculate.
 - Average = is the quotient obtained by dividing the sum total of a set of figures by the number of figures.
 - Median = applies to the value that represents the point at which there are as many instances above as there are below.
 - Mode = the most frequent value of a set of data.
- 3. Define the top and base depths by either **typing** in their **depth** values **or** by **clicking and dragging an interval on the screen**.
- 4. **Click** on the **Calculate button** or if you dragged the result will be displayed under the Curve name field. If mode was selected then the mode is displayed and the frequency is displayed in the field under the mode radio button.

The <u>Scale Change Line Color</u> Selection allows the user to view a scale change with a solid line color selected by the user. This scale change line is a solid line across the layer at the depth the scale change. The scale change line, to be viewed on the layer must first be initiated in the Edit Layer selection where this line can be turned on or off.

0K

Right click on the active curve layer and select Scale Change Line Color. This will activate the color picker.

Select a color from the Basic color palette or use a defined custom color and then **Click** on the **Button**.



The <u>Scale Change Line Thickness</u> Selection indicates the width of the scale change line in pixels. To change the scale change line indicators thickness, **right click** on an active curve layer, move the **mouse pointer** over the **Scale Change Line Thickness selection** and **clicking** on a new **thickness**.

Gamma Ray		Gamma Ray	
Line Width	•	Line Width	•
Line Pattern	•	Line Pattern	•
Line Style	•	Line Style	•
Line Color 🔰	•	Line Color	•
Scale		Scale	
Import I	•	Import	•
Point Indicators	•	Point Indicators	•
 Offscale Numerics 		 Offscale Numerics 	
Edit Curve		Edit Curve	
Open Curve Average Window		Open Curve Average Window	
Scale Change Line Color		Scale Change Line Color	_
Scale Change Line Thickness 🔰	1	Scale Change Line Thickness	•
Scale Text Orientation	2	Scale Text Orientation	> v
Edit Options	4	Edit Options	• • H
Add / Edit / Open Link	5	Add / Edit / Open Link	_
Exit		Exit	

The <u>Scale Text Orientation</u> Selection allows the user to change the scale text in the main body of the log from a Vertical Orientation to a Horizontal Orientation. Horizontal Orientation would be more applicable to Power*Log or Power*Core and the Vertical Orientation would be more applicable to Power*Curve

The <u>Edit Options</u> Selection allows the user to view and change the Log, Track or Layer Configurations as well as the Programs Systems Options. This option is available on all log layers.

Gamma Ray		Gamma Ray
Line Width Line Pattern Line Style Line Color Scale Import Point Indicators	-	Line Width Line Pattern Line Style Line Color Scale Import Point Indicators
Edit Curve Open Curve Average Window	-	Offscale Numerics Edit Curve
Scale Change Line Color Scale Change Line Thickness	•	Open Curve Average Window Scale Change Line Color Scale Change Line Thickness
Scale Text Orientation	Edit Log	Scale Text Orientation
Add / Edit / Open Link Exit	Edit Track Edit Layer Edit System	Edit Options Add / Edit / Open Link Exit

The <u>Add / Edit / Open Link</u> Selection allows the user to Link Windows Compatible files to a layer that can be opened at a user's discretion. Refer to Chapter 8 for detailed instructions. This option is available on all log layers.

Field Restriction Tables:

|--|

Digital Ourve			
Name	30	Character	Mandatory
Units	12	Character	Mandatory
Depth Units	12	Character	Mandatory
Null Value	10.5	Numeric	Mandatory
Remark	50	Character	Optional
Curve Scale			
Top Depth	5.5	Numeric	Mandatory
Bottom Depth	5.5	Numeric	Mandatory
Left	10.5	Numeric	Mandatory
Right	10.5	Numeric	Mandatory
Backup Scale	12	Character	Mandatory

Chapter Eleven - Core Creating, Describing, and Illustrating Core Data

Well Core information is entered into the window shown below. This information fills in the header of the Core Report and indicates the location of a cut core on the Core layer. If you are a Power*Core user you may wish to refer to the Power*Core Tutorial.

The actual **Core Descriptions** are entered into the **Core Description** window, under **Reports**. These **Core Descriptions** will then be used in conjunction with the core header to create a core description report with header. The **Core Description's** depth values **must** fall <u>between</u> the top and bottom of the cored interval.

<u>Note</u>: The **Core Report with Header** will <u>not</u> print out from the print well end report window, until you have completed at least **one** (1) **Core Description** that falls <u>between</u> the **Core's Interval** (To) and **Interval** (From) depth values.

Well Core				
Save Undo New Del F	irst Prev	? Next Last		
Core #	ring Date:	Dec 12, 2012	Core	
Interval	Length	Recovered	Diameter	Hole Size
6070 to 6106	36.00	32	4	
Formations Cored: Albequiqu	i			
Coring Company: ABC Corin	ig Company			
Service Reps: Red Flints	tone			
Bit Used				
Make Type	Serial #	Size		Color
BH C201	3428J2	3 199		left click to
Remarks:				change
Coring Times: 12, 14, 12, 10, 1 min/2ft. Core jammed off after			2, 16, 13, 14	, 56 🔥
The roughneck dropped Core		-	ailer. Put the	pieces
back together the best I could back together in the correct al	. Hopefull the			
				~
			Cor	e Descriptions

<u>Note</u>: The **Recovered** field should be filled in with a **Recovery Length** and not a **Percentage** (%). The percentage (%) is calculated for you on the final report and on the **Core** layer on the log.

Adding, Editing and Deleting a Core

Adding a Core

- 1. Click on Core under the Reports menu selection. This will activate the Well Core 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 **Shortcut Options** system window.

Editing a Core

- 1. Click on the **Core #...** button to view a list of **Cores** to date and then **double click** on the record that you wish to edit. Once the selected record is displayed in the **Well Core** window, make any changes you feel are necessary.
- Or, click twice on the Query button and then click on the Next Record button to view all of the records in the database. See the Database Navigational Tools section later in this User Manual for more information.
 Make to necessary changes.
- 4. Click on the **Save** button or press ALT-S and and then click on the appropriate button when prompted with the Shortcut Options system window.

Deleting a Core

1. Click on the **Core #...** button to view a list of **Cores** to date and then **double click** on the record that you wish

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

- 2. Or, **click twice** on the **Query button** and then **click** on the **Next button** to view all of the records in the database. Select the record you wish to delete and it will be displayed in the **Well Core** window.
- 3. Click on the Del Delete button. See the Database Navigational Tools section later in this User Manual for more information.

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.

Adding a Core Rate curve layer to the log

<u>Note</u>: You may also enter **Core** data values and increments of **1/4** or **1/5** into an existing **Drill Rate** curve layer via its **Curve Editor** window.

- 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. Click on Drilling Progress from the Tracks list on the left hand side (Available Logs) of the Log Configuration Builder window and you will notice that all of the Drilling Progress track's associated layers are
- displayed in the **Layers** list below. 3. **Click** on the **Core Rate** layer to highlight it.
- 4. On the **right** hand side (Active Log) of the Log Configuration Builder window, click on the Drilling Progress track to highlight it.
- 5. Click on the button and you will be prompted with the following system message, "Do you want

to add the selected layer into your log?" Click on the button.

6. You will now be given a **Get Name** window with "*Core Rate*" as the name in the **New Layer Name** field and

click on the **Drilling Rate** track on your log.

<u>Note</u>: The Core Rate curve has not yet been associated with the Core Rate layer. This will be done when the Add Curve window has been correctly filled in.

7. Click on the **Exit** button to return to the log and the log will be initialized with the new layer, which in turn will activate an Add Curve window.

The Add Curve window

1. Select an appropriate unit for the **Curve Units** field from the **Curve Units** field drop box, left and right scales grid type and backup scale type from the appropriate fields.

2. Click on to add the curve and its scale to the Core Rate layer and exit from the Add Curve window. <u>Note</u>: At times, the curve scales are not represented correctly. If this happens, simply click on Refresh Data, under the Options menu selection, and the log will be reset accordingly.

Changing the Color of the Core Rate curve

- 1. **Click** anywhere within the **Drilling Rate** track to make it the active track (indicated by a <u>green</u> highlight around the track).
- 2. Click on Core Rate in the Layer Selection List field to make Core Rate the active layer within the Drilling Rate track.
- 3. Right click anywhere within the Drilling Rate track to activate the pop-up menu.

•	
•	
▶	
•	black
	blue
	brown
	🗸 dark green
	dark red
	gray green
	greenly brown
۲	light blue light gray light yellow
۲	orange
Þ	purple red
	violet white yellow
	•

4. Click on Line Color and then select the appropriate color from the pop-up menu.

Adding values to the Core Rate curve

- 1. Double click on the Drilling Rate track to bring up the Curve Editor window for the Core Rate curve layer.
- 2. In the Curve Editor window, change the Auto Depth Increment field value to its desired setting.
- 3. Enter your values into the Depth and Value fields.

<u>Note</u>: After the first value has been entered into the **Depth** field, the **Curve Editor** window automatically performs each subsequent increment, according to the value placed in the **Auto Depth Increment** field. Consequently, the only values you need to enter manually, after the first entry, are the **Value** field values.

- 4. Click on the Save button.
- 5. Press the **Esc** key on the keyboard to exit from the **Curve Editor** window and you will then be returned to the main log.

Core Description

This report allows you to describe a Core. The long descriptions will be used in the Core Description Report that is printed out in the Well End Report. The short format can be utilized on the log, using the Sample/Core Description Transfer option or the automated transfer in the Core Description Window.

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

1. Click on the Reports menu selection and select Core Description if you do not want to fill in the Core Header

Core Descriptions

information or select on Well Core if you do. Click on the button after filling in the Core Header portion of the window. Core Description Save Undo New Del First Prev ? Next Last Dictionary Ascending Interval... Rock Type / Heading Auto Next to 1003.5 Sh / 1003.5 1000 To Long Desc Short Description Sh is predly dk, gy, micmica, carb, sils, fis. Ss lam are thn (<3mm) and are predly kl gy, f - c gr, occly vf gr, py srt, sbang - sbrdd, qtz, abnt sils cmt, com cly & pyric mtx, predly disaggd, predly tt / ns. com micas flks. mnr fld Long Description To Short Desc Shale with minor Sandstone laminae. Shale is predominately dark gray, micromicaceous, carbonaceous, siliceous, fissile. Sandstone laminae are thin (<3mm) and are predominately light gray, fine to coarse grained, ooccasionally very fine grained, pooly souted, subangular to subrounded, ugartz, commor miccaeous filakes, minor feldspar, abundant siliceous cement, common clay and pyritic matrix, predominately disaggregated, predominately tight with no shows.

 Transfer Options

 Transfer Depth Range

Dictionary

The **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

implemented when the record is saved and the **Start New Record** option is chosen. 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.

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

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

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

Automatic Description Transfer Options

Transfer Options	fer	
Transfer to Annotation Group:	lithtext1	•
🔽 Transfer Depth Range	🔽 Top Depth Only	✓ 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.

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 vehicle when activated will transfer the from and to depth interval to the log. The **Transfer Top Depth Only** check box vehicle when activated will transfer only the from depth interval to the log. The **Transfer Short Form** check box vehicle 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 <u>Interval...</u> 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 Del Delete button.
- The user will be prompted with a confirmation "Do you really want to delete?" Click on the <u><u>Yes</u> button.
 </u>

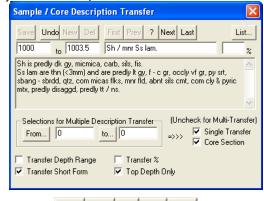
For an alternate method to place the Core Descriptions onto the log, see "*Transferring Core Descriptions*" on the following page.

Transferring Core Descriptions

Core Logs are normally printed on a log scale of 1:120 or 10" 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 10" or less, e.g. 1:96 or 1:48.

Transferring a Single Core Description

 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** 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.

- 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 Description

 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 List 1000 to 1003.5 Sh / mmr Ss Iam. %
Sh is predly dk gy, micmica, carb, sils, fis. Ss lam are thn (<3mm) and are predly It gy, f - c gr, occly vf gr, py srt, sbang - sbrdd, qtz, com micas fiks, 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
I Transfer Depth Range I Transfer % I Transfer Short Form I Top Depth Only

- 2. Then, **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. 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>total</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.

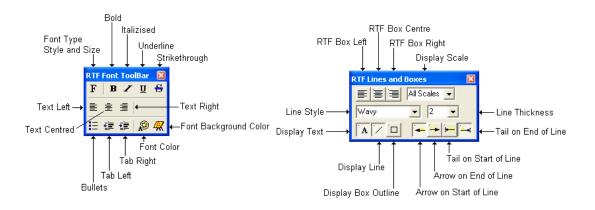
Note: The depth difference between the position of the first description and the actual start depth interval of the first description will remain constant for the entire range of your current transfer. If there are multiple descriptions for one interval they will be placed on the log in descending order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

Editing Core Descriptions

<u>Note</u>: Core Sections usually occupy a small interval and as a result their Core Descriptions will sometimes overlap. Therefore, edit any overlapping Core Descriptions so that they will be <u>legible</u> on the Core Log printed out at a scale of 1:120.

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...

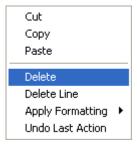
- 1. Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on it and then **selecting** that annotation layer you want to work with from the **Layer Section list** on the **Selection Toolbar**.
- 2. Click in annotation field box to highlight 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...

- 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.
- 4. Click and drag the mouse pointer to the Annotation's/Lithology Description's new position.
- 5. Release the mouse button, and the Annotation/Lithology Description will be redrawn at its new location.
- 6. 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.

Delete A	nnotation			×
8	Are you su	re you want to d	elete this annot	ation?
	Yes	No	Cancel]

- Yes 5. Click on button and the selected Annotation/Lithology Description will be deleted accordingly.
- 6. Click outside of the highlighted text field to close the toolbars.

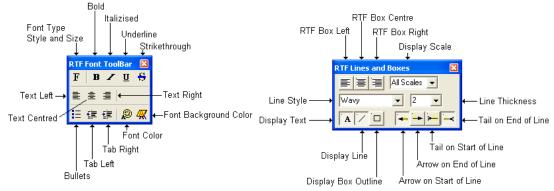
Drawing Interpreted Lithology on a Core Log

Note: You may wish to change the Screen Accuracy, e.g. 1' to. 0.5", to facilitate the accurate drawing of finely detailed lithology on the Core Log. Moreover, you may also wish to change the Log Scale to a smaller scale, e.g. 1:120 or 1:48.

For more information on drawing Interpreted Lithology, please refer to the "Interpreted Lithology Layer - Rock Type Builder" section in Chapter Eight of the User Manual or press F1 to access the On-line Help System, while the Rock Type Builder window is active.

Adding Annotations to an Annotation layer

- Click on a track containing an Annotation layer to make the track active (highlighted in green). 1
- 2. Select the Annotation layer, as the active layer, from the Layer Selection List field on the selection bar.
- Make a Lithology Description or Annotation layer active by **clicking** on the **track** that has an Annotation layer on 3. 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 4. 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.



- Click once more in the drawn area and you will get a flashing cursor. 5.
- 6. Type in your annotation.
- Utilize the options in the RTF Font and RFT line and box toolbars to get the desired effect on your annotation. 7.

8. Click anywhere outside the annotation box to close the toolbars. Repeat steps 2-6 for more annotations. Printing out a Core Log

Print [View Mode: MD]		Print [View Mode: MD]	
Printer: Adobe PDF Title Page/Legend/Tops/Surveys Page Drientation: Options Strip Log Title Page Core Log Title Page Core Log Title Page Core Log Title Page Core Log Title Page TRIVISON BMP Core Scale: 49 Vews Legend Legend Use Dynamic Legend Legend Ver Header Core Accessories Ver Footer Ver Footer	Page Margin: 0.25 Page Overlap Print Methods C Default Color Options C Auto C Color Mono Interval per Page 10.36 Log Widht: 22.77 "	Printer: Adobe PDF Title Page/Legend/Tops/Surveys Page Direntation: ♥ Strip Log Title Page ♥ Core Log Title Page ♥ Core Log Title Page ♥ Logo ■ Bore Hole Log Title Page ♥ Logo ■ Bore Hole Log Title Page ♥ Logo ■ Der Hole Log Title Page ♥ Logo ■ Der Hole Log Title Page ♥ Logo ■ Der Hole Log Title Page ♥ Core Scale: ■ C:\PowerSuite_V12\Location maps\anywhere map_Page_1. Title Page Remarks ■ Location Map ■ C:\PowerSuite_V12\Location maps\anywhere map_Page_1. Title Page Remarks ■ Legend ■ Use Dynamic Legend ■ Log ♥ Core Accessories ■ User-defined Interval Today Section (140.001 to 1047.00) ■ User-defined Interval Today Section (140.001 to 1047.00) ■ User-defined Interval ■ Today Section (140.001 to 1047.00) ■ User-defined Interval ■ Cores ■ Scale: ■ Scale: ■ Today Section (140.001 to 1047.00) ■ User-defined Interval ■ Today Section (140.001 to 1047.00) ■ User-defi	Page Margin: 0.25 Page Overlap Print Methods Color Options Auto Color Mono Interval per Page 55.88 Log Width: 10.50 ''
Formation Tops Print Quality: 300 Blank First Page	Help Exit	\$80.00.598.00 2 Mar 6, 2001 1000.001012.00 1 Mar 7, 2001 Image: Constraint of the second	Help

1. If this is a core log only it should be like the print window on the right. If the core log is part of the striplog it should be like the print window on the left.

N.B. The illustration on the left of the Print Log window shows that no information has been entered into the Core Header Report and has been drawn as a striplog only. The illustration on the right shows 2 Cores have been entered into the Core Header Report and will print a normal striplog Title Page, a dynamic legend, a striplog with the cored intervals included at a scale of 1:200 followed by separate Core logs on the tail of the striplog at a depth scale of 1:120. The difference in Title Page types is indicated the by the check box beside the Core Log option.

2. If you are printing out a striplog with Cores on the tail as illustrated by the print log window on the right you must decide whether or not you wish to display the **Core Accessories** on the printout of your main log by

either activating or not activating the **Core Accessories** check box in the **Print Log** window. Sometimes the user gets carried away with symbols on the larger scale and looks very busy when printed out at a smaller scale.

3. Decide whether or not you wish to modify the properties of the Core Log by selecting appropriate Depth Axis Spacing settings from within the Log Configuration window as shown on the next page. If you do change the grid pattern it is not recommended to print the main striplog out as the depth axis grid gets all messed up with the smaller printing scales. This suggestion is only for printing out the core logs by themselves

<u>Note</u>: If you want your **Core Log** to have a depth grid pattern of **1/5ths** or **1/4trs** of a meter, you <u>must</u> adopt the **Depth Axis Spacing** settings listed under **Core Log Scales** below within the **Log Configuration** window.

Log Scales	Major	Minor	Increment
5" (Imperial)	50	10	2
1:240 (Metric)	10	5	1
Core Log Scales	Major	Minor	Increment
1:120 or less	4	1	0.4 (For Grid Patterns displayed in 1/5ths)
1:120 or less	4	1	0.5 (For Grid Patterns displayed in 1/4trs)

To activate the Log configuration window shown below you must **Click** on the **Edit** menu selection and then **click** on the **Log Configuration** selection.

Log Configuration	\mathbf{X}	
Save Undo New Del First Prev ? Next Last	 Width FG Color BG Color	
Name: Striplog	10.45 blue 💌 white 💌	
Current Track	emarks:	
Grid & Log Definitions		
Depth-Axis Spacings (1:240)	Grid Lines for Data-Axis and Depth-Axis	
Type: Linear Major: 4	Major Minor Increment	
@ 1: 240 ▼ Minor: 1	Style: Solid 💌 Solid 💌 Dot 💌	
Increment: .4	Width: 2 1 1	
Log Depth Increment Header Length Current Depth Scale: 1: 1 Image: Display Header 2 983		

<u>Note</u>: Implementing one of the Core Log Scale settings described above is <u>only</u> applicable to the printout of a Core Log. Once you have finished printing out your Core Log, you <u>must</u> change the Depth Axis Spacing values back to the Default Log Scale settings outlined above.

Chapter Twelve - System Help Index:

Use this command to display the opening **Help** screen. From the opening screen, you can jump to step-by-step instructions for using **Power*Log / Core & Curve** and various types of reference information. Once you open **Help**, you can **click** on the **Contents** tab whenever you want to return to the opening screen.

Using Help:

Use this command to display the opening **Help** screen. From the opening screen, you can jump to step-by-step instructions for using **Power*Log / Core & Curve** and various types of reference information. Once you open **Help**, you can **click** on the **Contents** tab whenever you want to return to the opening screen.

About Power*Log / Core & Curve:

About		
Power*Log 12 Metric and Imperia Copyright © 2002 Canada: (403) 773 Single-User Versio	TriVision Geo 7-9454	n
12, 0, 1, 0	OK	Visit us on the Web

Show Registration:

This menu selection tells the user which system flags they have. The system flags enable or disable some of the functionality's of the program. To date there are 32 system flags available.



Current Access Flags:

- 1. Vacant
- 2. Vacant
- 3. Version 12
- 4+5+6 Version 11
- Version 10 4+5
- 4+6 Version 9 Version 8
- 4.
- 5. Version 7 6. Version 6
- Power*Log Flag 7.
- 8. Power*Curve Flag Power*Log Correlational / Lithology Flag
- 9. 10. LAS Import
- 11. LAS Export
- 12. Power*Curve Correlational Flag
- 13. Sybase Network Flag
- Oracle Network Flag 14.
- 15. Power*Suite Metric Flag
- 16. Power*Suite Imperial Flag
- Power*Suite Automated Import Flag 17.
- 18. ASCII to LAS Builder Flag
- 19. Vacant
- 20. Vacant
- Version 11 Flag Basic Version 21.
- Power*Suite Automated Database Backup Flag 22.
- Power*Log True Vertical Depth Flag 23.
- 24. Power*Curve Vertical Section Flag
- 25. Vacant
- **Printing License** 26.
- 27. Vacant
- 28. Power*Log Network Database Flag
- 29. Power*Curve Network Database Flag
- 30. Power*Suite Database Manager Flag
- 31. Vacant
- 32. Power*Core Flag

Check for Updates:

This menu selection allows the user to check if there are any updates available on our website.

Useful Topics:

This menu selection allows the user to look for useful topics such as How to Sidetrack a Well.

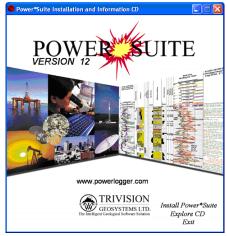
Context Sensitive Help button:

Use the Context Sensitive Help button to obtain help on some portion of Power*Log / Core & Curve. When you select this button, the mouse pointer will change to an arrow and question mark. With this new pointer, hover over a selection and then depress the F1 key on your keypad in the Power*Log / Core & Curve window, such as another **Toolbar** button and the **Help** Information will appear.

Chapter Thirteen - Power*Suite Installation Procedures

Power*Suite Installation Procedure

1.) Insert Power*Suite CD V12 into the CD Rom Drive of your Computer.



2.) If the Autorun works the CD ROM should be activated automatically and you will see the Window above. Select Install Power*Suite. If the CD does not Autorun move ahead to Step 4.

Power*Suite Installation and Information CD		
Return to Menu		
Install Power Suite		
Power*Suite		
The main set up will install all needed files		
Main Setup		
Installation Instructions		
- Install Crystal Reports Only - Install Update Only - Hardware Key Driver Only - Install ASCII to LAS Utility Only - Install Office Viewer		

3.) Select the Main Setup selection in the Install Power*Suite section. Skip to Step 6.



4.) Click on the **button** on your task bar and then click on the **Run selection**. This will activate the Run window.

	Run ?X		
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.		
	Open: E:(setup.exe		
	OK Cancel Browse		
5.) Click on the Browse button and select the setup.exe from the CDrom drive. Click on the			
DK button in the Run window.			

button.

6.) This will activate the Install Shield setup followed by the Windows Install window and the Power*Suite Welcome Message Window. if your computer is running on XP or an older Operating System Click xt≻

on the	Ne:
--------	-----

isie	Welcome to the InstallShield Wizard for PowerSuiteV12
MON E	The InstallSheld(R) Wizard will instal PowerSuite/12 on your computer. To continue, click Next

This will activate the License Agreement window. Click on the 💽 beside I accept the terms in the 7.) Next > license agreement. Then click on the button.

¢	🖟 PowerSuiteV12 - InstallShield Wizard 🛛 🛛 🔀		
ć	License Agreement		
	Please read the following license agreement carefully.		
	This is a legal agreement between you ("Licensee") and TriVision Geosystems Ltd. ("Licenser") for the right to use the software you are installing under the restrictions set forth in the following Terms and Conditions.		
	Definitions		
	Licensed Property The set of software products in executable image format only identified in this agreement.		
	Licenser The party granting the right to use the licensed property.		
	Licensee The party receiving the right to use the licensed property.		
	I accept the terms in the license agreement Print		
1	I do not accept the terms in the license agreement		
InstallShield			
	< Back Next > Cancel		

This will activate the Customer Information window with User Name and Organization fields. In the 8.) Install this application for portion of the window Click on the 🖻 beside Anyone who uses this ſ Nevt 5

computer. Then click on the 🛄	NEXT 8	button.
-------------------------------	--------	---------

🖟 PowerSuiteV12 - InstallShield Wizard 🛛 🛛 🔀		
Customer Information		
Please enter your information.		
User Name:		
Robert W. Sephton		
Organization:		
Trivision Geosystems Ltd.		
Install this application for:		
 Anyone who uses this computer (all users) 		
Only for me (Robert W. Sephton)		
InstaliShield Cancel Cancel		

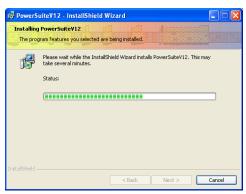
9.) This will activate the **Destination Folder** window with **C:\POWERSUITE_V12** as the default location. **Click** on the **Next** > **button**.

The User has the ability to change the destination folder if required by clicking on the		
<u>Change</u> button. This is not recommended.		
PowerSuiteV12 - InstallShield Wizard		
Destination Folder Click Next to install to this folder, or click Change to install to a different folder.		
Instal PowerSuite/12 to: C:\PowerSuite_V12\ Change		
InstaliSheld <back next=""> Cancel</back>		
10.) This will activate the Database Folder Location window with C:\POWERSUITE_V12\Database as		
the default location. Click on the Next > button.		
The user has the ability to change the database destination folder by clicking on the		
button. This is recommended if you are working with a LAN system where the Network		
directory is being backed up on a regular basis. If not the default destination folder is		
recommended.		
1₽ PowerSuiteV12 - InstallShield Wizard		
Click Next to install to this folder, or click Change to install to a different folder.		
Instal PowerSuiteV12 database to: C;PowerSuite V12(Database) [Danne]		
C:/PowerSuite_V12(Database) Change		
InstaliShield		
< Back Next > Cancel		
11.) This will activate the Setup for Hasp Window. If you have a Hasp USB or parallel port key and it has		
been activated for Power*Suite Version 12 Click on the Next > button. If you do not have a		
hasp key and you are evaluating then Uncheck the Ves, I want to use a HASP key and then Click on		
the Next > button		
😰 PowerSuiteV12 - InstallShield Wizard		
Do you have a HASP Key?		
HASP Files Lust to us a MARLING		
Ves, I want to use a HASP key		
InstaliShield		

- 12.) This will activate the Ready to Install window. Click on the Install button.
- 13.) Next the user will see the Installing Power*Suite window copying files, writing to the registry, creating desktop icons, creating start menu folder, ODBC components etc. An example of this window can be seen below.

< Back Instal Cancel

Next >



14.) This will activate the Sentinal HASP Run time Setup Welcome window. Click on the button.



Next ≻

button.

15.) This will activate the End User License Agreement for the Hasp Driver. Click on the radio button

Next ≻ beside I accept the license agreement and then Click on the



16.) This will activate the Ready to Install window. Click on the

🔀 Sentinel HASP Run-time Setup	
Ready to Install the Application Click Next to begin installation.	
Click the Back button to reenter the installation informathe wizard.	tion or click Cancel to exit
Wise Installation Wizard®	
	ck Next > Cancel

17.) This will initiate the install windows for the HASP device drivers.

📸 Sentinel HASP Run-time Setup	
Updating System The features you selected are currently being installed.	
Wise Installation Wizard®	Cancel

Einish

18.) When the installation is complete the program will activate the Finished window. Click on the

bι	button					
	🛃 Sentinel HASP Run-tim	ne Setup				
		Sentinel HASP Run-time has been successfully installed.				
	Sentinel HASP"	The Sentinel HASP Run-time Environment uses port 1947 to communicate with local and remote components. If you use a firewall, ensure that it does not block this port.				
		Click the Finish button to exit this installation.				
	< Back Finish					

Next ≻

19.) This will activate the **Power*Suite Update Welcome Message** Window. **Click** on the **button**.

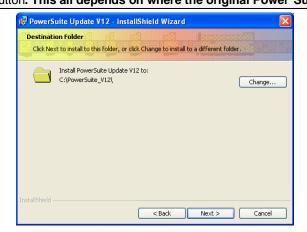
🙀 PowerSuite Update V12 - InstallShield Wizard 🛛 💌				
Nisio	Welcome to the InstallShield Wizard for PowerSuite Update V12			
COV IN	The InstallSheld(R) Wizard will install PowerSuite Update V\$2 an your computer. To continue, click Next.			
	WARNING: This program is protected by copyright law and international treates.			
No Market Address Contraction (Science A)	< Back Next > Cancel			

20.) This will activate the License Agreement window. Click on the radio button beside I accept the license agreement and then Click on the Next > button.

License Agreement Please read the following license agreement carefully. This is a legal agreement between you ("Licensee") and TriVision Geosystems Ltd. ▲ ("Licenser") for the right to use the software you are installing under the restrictions set forth in the following Terms and Conditions. Definitions Licensed Property The set of software products in executable image format only identified in this agreement. Licenser The party granting the right to use the licensed property.
This is a legal agreement between you ("Licensee") and TriVision Geosystems Ltd. ("Licenser") for the right to use the software you are installing under the restrictions set forth in the following Terms and Conditions. Definitions Licensed Property The set of software products in executable image format only identified in this agreement. Licenser The party granting the right to use the licensed property.
("Licenser") for the right to use the software you are installing under the restrictions set forth in the following Terms and Conditions. Definitions Licensed Property The set of software products in executable image format only identified in this agreement. Licenser The party granting the right to use the licensed property.
("Licenser") for the right to use the software you are installing under the restrictions set forth in the following Terms and Conditions. Definitions Licensed Property The set of software products in executable image format only identified in this agreement. Licenser The party granting the right to use the licensed property.
Licensed Property The set of software products in executable image format only identified in this agreement. Licenser The party granting the right to use the licensed property.
identified in this agreement. Licenser The party granting the right to use the licensed property.
Licensee The party receiving the right to use the licensed property.
I accept the terms in the license agreement Print
I do not accept the terms in the license agreement
< Back Next > Cancel

21.) This will activate the **Destination Folder** window with **C:\POWERSUITE_V12** as the default location. **Click** on the **button**.

The User has the ability to change the destination folder if required by clicking on the
Change...
button. This all depends on where the original Power*Suite was installed.



22.) If you have **previously installed the floating license you** will want to **Click** on the **down arrow** beside the **Floating Update** and **select** "This feature will be installed on the local hard drive" as shown

below. Click on the	Next > button		
	🝘 PowerSuite Update V12 - InstallShiel	d Wizard 🛛 🛛	
	Custom Setup	Streetwork Br	
	Select the program features you want installed		
	Click on an icon in the list below to change how a	feature is installed.	
	Update	This is for floating powercurve	
	This feature will be installed on lo This feature, and all subfeatures,		
	This feature will be installed when		
	× This feature will not be available.		
	Install to:		
		Change	
	InstallShield	< Back Next > Cancel	
🔀 PowerSuite Update V12 - InstallShiel	d Wizard 🛛 🔀	🙀 PowerSuite Update V12 - InstallShield	Wizard
Custom Setup Select the program features you want installed.		Custom Setup Select the program features you want installed.	
Click on an icon in the list below to change how a f	antura is installed	Click on an icon in the list below to change how a fe	asture is installed
Update	Feature Description	Update	Feature Description
Vpdate Floating		Update Floating	This is for floating powercurve installations only.
	This feature requires 0KB on your hard drive.		This feature requires OKB on your hard drive.
Install to: C:\PowerSuite_V12\		Install to: C:\PowerSuite_V12\Floating\	
C:{PowerSuite_V12;	Change	C:{PowerSuice_V12(Ploating)	Change
	: Back Next > Cancel		Back Next > Cancel
Befo	re	After	

Install 23.) This will activate the Ready to Install the Program window. Click on the button. Next the user will see the Installing Power*Suite Update window copying files, removing backup files etc. An example of this window can be seen below

🔀 PowerSuite Update V12 - InstallShield Wizard	🖟 PowerSuite Update V12 - InstallShield Wizard
Ready to Install the Program The wizard is ready to begin installation.	Installing PowerSuite Update ¥12 The program features you selected are being installed.
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	Please wait while the InstallShield Wizard installs PowerSuite Update V12. This may take several minutes. Status:
Installshield	Installshield < Back Next > Cancel

24.) Once the Update Installation is complete the Install Wizard Completed window shown below will be

Einish

activated. Click on the Einish buttons twice for the Update and the Main install						
PowerSuite Upda	DowerSuite Update V12 - InstallShield Wizard		InstallShield Wizard Completed			
	The InstallShield Wizard has successfully installed PowerSuite Update V12- Click Finish to exit the wizard.		The InstallShield Wizard has successfully installed PowerSuteV12. ClickFinish to exit the wizard.			
	< Back Finish Cancel		< Back Finish Cancel			
You will now have successfully installed the Power*Suite Update.						

If you want to run a trial version of Power*Suite, please refer to the Trial License Activation section on page 497. If your trial license runs out and you want further time to evaluate refer to page 496.

button.

Hasp Device Driver Installation Procedures

We have adapted our authorization from Version 3.0 onward with a Hasp Hardware Key. Once a Power*Suite program is loaded on a machine the user has simply to attach a Hasp Hardware key to the Parallel Port on their computer. The program is initially installed and protected by a software program. We have utilized a Software Authorization Program called Crypkey. Hasp Device Driver Installation

- 1. If the AutoRun is still running **Select Install Hardware Key Driver** and then skip to step 4.
- Click on the button on your task bar and then click on the Run selection. This will activate the Run window.
- 3. Browse and select the **HASPUserSetup.exe** from the root drive of the the cd rom drive. Then **click** on the

button in the Run window.						
	Run	?				
	-	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.				
	Open:	E:\HASPUserSetup.exe				
		OK Cancel Browse				
			Next >			

4. This will initiate the Sentinal HASP Run time Setup welcome window. Click on the



This will activate the End User License Agreement for the Hasp Driver. Click on the radio button beside I accept the license agreement. Then click on the better button.

	d a	Sentinel HASP Run-time Setup			
	License Agreement You must agree with the license agreement below to proceed.				
	SAFENET ^			<u> </u>	
		LICENSE AGREEMENT			
	C. A So er SI	MPORTANT INFORMATION - PL AREFULLY BEFORE INSTALLING LL ORDERS FOR AND USE OF TH OFTWARE including any revisions, con- shancements, updates and/or upgrades to UPPLIED BY SAFENET, INC., or any I accept the lice I do not accept the installation Wizard® Reset	THE SOFTWARE PROGR. E SENTINELHASP [™] RUN [*] rections, modifications, thereto (hereinafter **Software v of its affiliates (either of the	AM. TIME •")	
19) T	his will activate the rea	ady to install. Then click	on the Next >	button	
10.).1		Bentinel HASP Run-time Setup		•	
		Ready to Install the Application Click Next to begin installation.			
		Click the Back button to reenter the installatio	on information or click Cancel to exit		
		the wizard. Wise Installation Wizard®	< Back Next> Cancel	-	
20.)R	eady to Install window	will now display. Click or	n the Next >	button	
	Sentinel HASP Run-time Setup		🕞 Sentinel HASP Run-time Set	iup	
	Ready to Install the Application Click Next to begin installation.		Updating System The features you selected are curr	ently being installed.	
	Click the Back button to reenter the installat the wizard. Wise Installation Wizard®	ion information or click. Cancel to exit	Wise Installation Wizard®		
Ì	wies metaliauun wikaru -	<back next=""> Cancel</back>	WING HISTORIAUUT WIZOLUW		Cancel

21.) This will initiate the install windows for the HASP device drivers

🖓 Sentinel HASP Run-time Setup			
	Sentinel HASP Run-time has been successfully installed.		
Sentinel HASP	The Sentinel HASP Run-time Environment uses port 1947 to communicate with local and remote components. If you use a firewall, ensure that it does not block this port.		
	Click the Finish button to exit this installation.		
K Back Finish Cancel			

22.) After the installation has been completed you will view the **Hasp Device Drivers Installation Finished** window. Click on the **Finish** button.

Hasp Key License Activation



1.) To activate the Power*Suite License Selector click on the **button** on the toolbar and click on All

Programs and select **POWER*SUITE_V12**. Then, select **Utilities** and **click** on the License Selector selection as shown above. This will activate the License Selector window.

Power*Suite License Selector V 12					
Options					
Current Configuration					
Current Directory: c:\powersuite_v12					
Floating License:	NO				
Remote Directory:	NO				
Protection Type:	СгурКеу		Exit		

- 2.) **Click** on the **Options** selection to view the pull down menu.
- 3.) Select HASP. The Protection type should read HASP Hardware Key as viewed in the Power*Suite License Selector window shown below.

Options	nt Configuratio	n	
Curren	t Directory:	c:\powersuite_v12	
Floatin	ig License:	NO	
Remot	e Directory:	NO	
Protec	tion Type:	HASP Hardware Key	Exit

4.) Click on the **button**

You are now ready to run either Power*Log, Power*Curve or Power*Core depending on your Hasp Key and its authorization.

Crypkey Power*Suite License Authorization

The user may need further evaluation time or they may need temporary license activation because of a malfunction HASP hardware key. To do this, proceed with the following steps.

	PowerSuite V12 PowerCore PowerCurve PowerLog PowerLog PowerSuite Help Manual HASP Update Tool		erSuite V12 PowerCore PowerCurve PowerLog PowerSuite Help Manual HASP Update Tool Utilities ASCII Lithology Export Data Transfer Tool Database Manager LAS Curve Export LAS Curve Export License Configuration License Selector Metafile Editor Reporting Tool
	All Programs All Programs SuperSuite V12 SuperSuite V	> 🔒	Word Reports
1.)	Click on the button on the toolbar and click on All Programs and select Utilities and click on the License Configuration selection. file window.		POWER*SUITE_V12 . Then, I activate the Select License
2.)	Click on the pgeology.lic file name in the PowerSuite_V12 folder and the the Select License File window to proceed.	n click c	on the ^{Open} button in
3.)	Acknowledge both the subsequent error message and the contact message buttons . This will now activate the License Configuration V12 window w Tab.		

License Configuration V 12	
Authorization Floppy Disk Transfer Phone Transfer In Phone	e Transfer Out Direct Transfer
License File: C:\PowerSuite_V12\pgeology.lic	
Site Code: 3D76 QAD0 C81F 41C2 FC	
Site Key:	
Authorize Display Li	cense Info
	OK Cancel Apply

- 4.) Click on the Site Code: button within the window.
- 5.) This will activate a System message stating *"Site Code generation may take a few minutes. Do you wish to continue?"* **Click** on the **button**.
- 6.) The *Site Code* will be generated and can then be displayed in the *Site Code* field. This number can be written down, copied and pasted and sent to Trivision via phone at (403) 777-9454, or email at support@powerlogger.com.
- 7.) Trivision will generate a Site Key. This number will have coded within it the number of days the program will be activated for and which modules you wish to purchase or evaluate. Type the site key number within the Site Key Field.
- 8.) **Click** on the

button. If successful you will get a message indicating so.

Trial License Activation

1.) Double click on the Power*Log / Curve or Core Desktop Icons PowerLog V12 or click on the



the taskbar and Click on **PowerSuite_V12** and then select the **Power*Log / Curve or Core Powe** Selections.

2.) This will activate a CP Auth	Error message. Click on the	OK button.
	CP Auth Error	×
	AUTH_ERR (-4): AUTHORI	ZATION NOT PRESENT
		ОК
3) This will activate a CP Mess	age shown below. Note the phy	one number for later us

3.) This will activate a CP Message shown below. Note the phone number for later use. The trial license activated will be for 7 days. If you need further time to evaluate, you will have to call the phone number for more time. Click on the OK button.

CP Messag	ge	×
8	Please call Trivision Geosystems Ltd. at (403) 777-9454 to activate a license.	
	ОК	

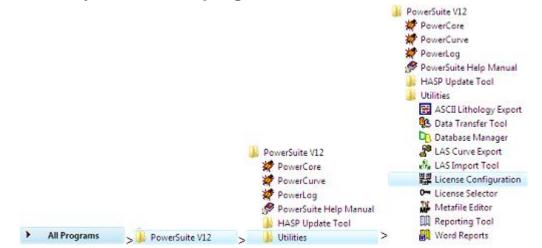
4.) This will activate a System Message indicating there was no valid license and do you want to generate a trial

license. Click on the	button.
	System Message
	Valid license not found.
	Do you wish to generate a TRIAL LICENSE. This process may take a minute.
	Yes No
5.) This will activate a CP Messag	e shown below. Click on the OK button.
CP	Message
	Itart initializing Copy Protection. Press OK to continue.
	ОК
6.) This will activate another CP M	essage shown below. Click on the OK button
	CP Message
	Trial version activated for 7 days.
	ОК
7.) This will activate a final System program.	Message. Click on the OK button. Repeat Step 1 to activate the
Syst	em Message 🛛 💌
	Trial license activated. You may start the program again.
	ОК

Chapter Fourteen - Authorization PowerSuite License Configuration Utility: Software Authorization

We have adapted our authorization from Version 3.0 onward with a Permanent Hasp Hardware Key. The program is initially installed and protected by a software program. We have utilized a Software Authorization Program called Crypkey.

How to initially authorize a program once it has been installed



The user may need further evaluation time or they may need temporary license activation because of a malfunction HASP hardware key. To do this, proceed with the following steps.



1.)

file window.

Click on the **button** on the toolbar and **click** on **All Programs** and select **POWER*SUITE_V12**. Then, select **Utilities** and **click** on the **License** Configuration selection. This will activate the Select License

.) **Click** on the **pgeology, lic** file name in the PowerSuite V12 folder and then **click** on the **Open button** in

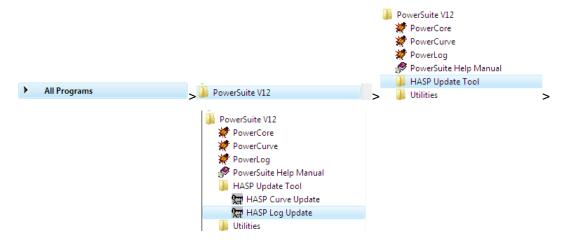
- Click on the pgeology.lic file name in the PowerSuite_V12 folder and then click on the upen the Select License File window to proceed.
- Acknowledge both the subsequent error message and the contact message by clicking on the buttons. This will now activate the License Configuration V12 window which will default to the Authorization Tab.

	License Configuration V 12	
	Authorization Floppy Disk Transfer Phone Transfer In Phone Transfer Out Direct Transfer	
	License File: C:\PowerSuite_V12\pgeology.lic	
	Site Code: 3D76 0AD0 C81F 41C2 FC	
	Site Key:	
	Authorize Display License Info Kill License Confirmation Code: xxxx Write down the confirmation code for future verification.	
	OK Cancel Apply	
4.) Click on the	ode: button within the window.	
5.) This will activate a Sy	stem message stating "Site Code generation may take a few m	inutes. Do you wish to
continue?" Click on t	he <u>Yes</u> button.	·
	e generated and can then be displayed in the Site Code field. The sted and sent to Trivision via phone at (403) 777-9454, or emailer.com.	
	<i>Tite Key.</i> This number will have coded within it the number of day odules you wish to purchase or evaluate. Type the site key num	
7.) Click on the	button. If successful you will get a message indicating s	SO.
Your Power*Geology prog	gram is now temporarily activated and you can proceed with using	ng the modules activated
this authorization. This wi	I only be a temperary way to protect the program. Once the pro	gram has been paid for y

Your Power*Geology program is now temporarily activated and you can proceed with using the modules activated by this authorization. This will only be a temporary way to protect the program. Once the program has been paid for we will send you a Hardware Key in the Mail or Courier depending on your requirements. This will also act as a stopgap measure if the Hardware Key malfunctions or is lost.

PowerSuite Hasp Update Tool Utility: Hardware Authorization (HASP Key)

The following are the instructions on how to update your HASP key, either a hardware key or USB key.





1.) Click on the **Second Second** button on the toolbar and click on All Programs and select POWER*SUITE_V12. Then

Hasp Update Tool, Then, and click on the HASP Log Update selection. This will activate the Hasp Key Activation window.

🔚 HASP KEY ACTIVATION - CUSTOMER	×
Get ID	
Open File	
Code	
Activate Key	Close

2.) Click on the **Dpen File** button. This will activate the open file window and locate the codes that were sent to you via email or other means. If you do not have email then you will have to fill in this Code field by hand.

	open	
	Look in: 隘) Cardfile 🗾 🗲 🖻 📸 🕮 -
	64023V10	D-20110714.txt
	64023V10	
	CARDFILE SEPHTON.	
	File name:	64023/10.txt Open
	Files of type:	Cancel
		C Open as read-only
2) Oliels on the Open h.		
3.) Click on the b	utton and	d the codes will then be viewed in the activation window as shown below
0- HAS	KEV ACTIVA	TION - CUSTOMER
ene i Dist	- KET AGTITA	
G	et ID 48	6FBF02
	en File D:\	\Documents and Settings\R.W. Sephton\My Documents\Activation codes\50289V11.txt
		abocuments and Settings (1.1.4). Sepinon (My Documents Activation codes (30203/11.1.4)
		e4-4087-0817-4fe2-0473-72e8-1ebd-033c-6e8e-bdb1-2183-5fce-4728-ab52-4e6c-06a
Astin	te Key	Close
Activa	ile illey	
1		
4.) Click on the Activate Key	outton If	i dana ayaaaaful yay will raasiya a ayatam maaaaga aa ahawa halaw (

4.) Click on the **button**. If done successful you will receive a system message as shown below. Or if unsuccessful you will receive a message such as tampering as shown below.

POWERSUITE User Manual Version 12

	Activate Key	Activate Key 🛛 🛛
	Key Activated Successfully.	Detected tampering.
	ОК	ОК
5.) Click on the Close	button to close the window	<i>.</i>

6.) To check your key for activation you must **activate the Power*Suite application** and then **Click** on the **Help menu selection** and then **select show registration**. This window will show you the access flags the Hasp Key now contains.

Security	y Information
i	License#: [50289] Key ID: [1265614594] Access Flags: [4 5 6 7 8 9 10 11 12 15 16 17 18 23 24 28 30 32] Access Flags (hex):[0001 1011 1111 0011 100 0011 0001 0101] Access Flags (hex):[ffff ffff ffff ffff ffff ffff ffff ff

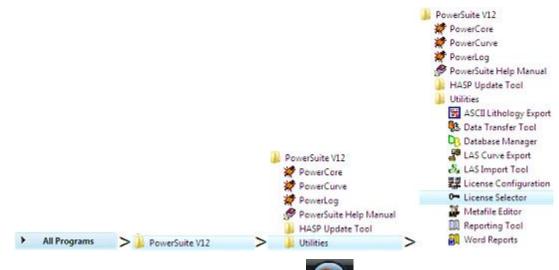
Chapter Fifteen – License Selector

The License Selector program can be accessed through the Power*Suite_V11 \ Utilities and facilitates the selection between the two different licensing methods available for the Power*Suite applications. The two types of authorizations that can be implemented to run our applications are:

- Hasp Key (hardware license) that sits on either the **parallel** or **USB** port of your computer. This is also known as a dongle or hardware key.
- **Crypkey** (software license) is also available that can either reside locally on your computers hard drive or can reside on a network drive.

Hasp (Hardware Key) License Activation

To activate a Hasp (hardware) key the user must first place the Hasp (parallel port) key on the parallel port before the printer cable. If you have a USB Hasp key this must be placed on the USB port. If you have not installed the Hasp key driver on your computer you must insert the Power*Suite CD-ROM and run the executable (hdd32.exe) to enable the program to see the Hasp key.



1.) To activate the Power*Suite License Selector click on the **Selector** on the toolbar and click on All

Programs and select **POWER*SUITE_V12**. Then, select **Utilities** and **click** on the License Selector selector as shown above. This will activate the License Selector window.

Power*Suite License	Selector V 12	
Options		
Current Configuratio	in	
Current Directory:	c:\powersuite_v12	
Floating License:	NO	
Remote Directory:	NO	
Protection Type:	СгурКеу	Exit

2.) Click on the Options selection to view the pull down menu.



3.) **Select HASP**. The Protection type should read HASP Hardware Key as viewed in the Power*Suite License Selector window shown below.

	Power*Suite License Selector V 12 Options
	Current Configuration Current Directory: c:\powersuite_v12 Floating License: NO Remote Directory: NO Protection Type: HASP Hardware Key Exit
Click on the	

You are now ready to run either Power*Log, Power*Curve or Power*Core depending on your Hasp Key and its authorization.

Crypkey (Software) License Activation [Local]

The Crypkey Authorization (Local) is the default License Activation when the program is first installed. The program authorization must be done by TriVision Geosystems Ltd.. To activate a trial or permanent Local Crypkey license please call our office @ (403) 777-9454. The user should refer to the License Configuration section in the manual to generate a site code.



1. To activate the Power*Suite License Selector click on the **Programs** and select **POWER*SUITE_V12**. Then, select **Utilities** and **click** on the

License Selector selection. This will activate the License Selector window.

Power*Suite License	Selector V 12	
Options		
Current Configuratio	n	
Current Directory:	c:\powersuite_v12	
Floating License:	NO	
Remote Directory:	NO	
Protection Type:	СгурКеу	Exit

2. Click on the Options selection to view the pull down menu.



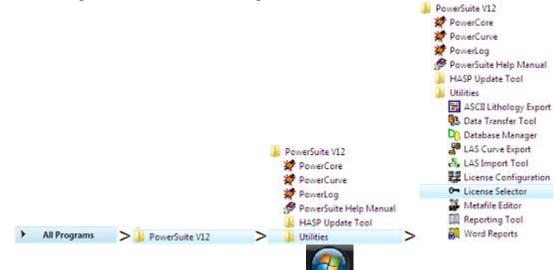
- 3. Select **Crypkey** to activate a pop-out menu.
- 4. Select **Local** from the pop-out menu. The Protection type should read **Crypkey** as viewed in the Power*Suite License Selector window shown above.

5. Click on the Exit button.

You are now ready to run Power*Log, Power*Curve or Power*Core depending on your Crypkey local license and its authorization permissions.

Crypkey (Software) License Activation [Remote]

The Crypkey Authorization (Remote) licensing has to be done by Trivision Geosystems Ltd. on a Network Server. To activate a trial or permanent Remote Crypkey license please call our office @ (403) 777-9454. The user should refer to the License Configuration section in the manual to generate a site code.



1. To activate the Power*Suite License Selector click on the **button** on the taskbar and click on All

Programs and select **POWER*SUITE_V12**. Then, select **Utilities** and **click** on the License Selector selection. This will activate the License Selector window.

Power*Suite License	Selector V 12				
Options					
Current Configuratio	n				
Current Directory:	c:\powersuite_v12				
Floating License:	NO				
Remote Directory: NO					
Protection Type:	СгурКеу	Exit			

2. Click on the Options selection to view the pull down menu.



- 3. Select Crypkey to activate a pop-out menu.
- 4. Select Remote to activate another pop-out menu.
- 5. Select either the UNC Network Path or the Mapped Network Drive selection to direct the Power*Suite applications to the location of the licensing files. The Protection type should read Crypkey as viewed in the Power*Suite License Selector window as well as the path to the remote directory where the license files are located as shown above. Refer to step 6 or 7 depending on your application.
- 6. UNC Network Path will activate a window in which the user should type in the path to the Crypkey License files

as shown below and then click on t	the OK button.	
	UNC Network Path	
	Please enter UNC Network Path	
	\\cgyp-license server5\powersuite license	
	ОК	Cancel

The result of step 6 should look like the picture shown below..

Power*Suite License	Selector V 12	
Options		
Current Configuratio	on	
Current Directory:	c:\powersuite_v12	
Floating License:	NO	
Remote Directory:	\\cgyp-license server5\powersuite license	
Protection Type:	СгурКеу	Exit

7. Mapped Network Drive will open a window in which the user will select the drive and directory in which the

Crypkey License files reside an	d then click on the DK button .
	Choose a directory
	Directories: p:\powersuite license
	Cancel
	Drives:

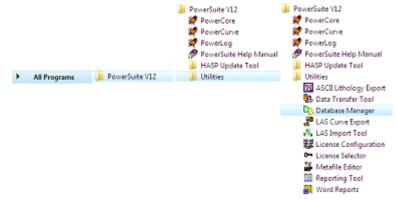
The result of step 7 should look like the picture shown below.

Power*Suite Licen	se Selector V 12	
Options		
Current Configurat	tion	
Current Directory:	c:\powersuite_v12	
Floating License:	NO	
Remote Directory:	p:\powersuite license	
Protection Type:	СгурКеу	Exit
the Exit b	utton	

You are now ready to run Power*Log, Power*Curve, Power*Core or ASCII to LAS depending on your Crypkey remote license and its authorization permissions.

Chapter Sixteen – Database Management

The Database Management tool allows the user to perform basic database functions on Power*Suite's access database. There are times where the performance of the database may become less responsive or slower to retrieve data. This would be case where the user would perform a compaction / repair on the database. The other utility provided would be changing passwords or a backup to the access database.



Database Management – How to Change your Password

The user cannot be connected to the database (Power*Log, Power*Core, Power*Curve, LAS Export Modules open) when this procedure is performed. If they are open please disconnect by selecting disconnect from the file menu.

The login window information must be filled in correctly for the user to be able to utilize any of the functionalities of this utility.



 Click on the button, select Programs, select Power*Suite_V12, select Utilities and click on the Database Management as shown above. This will activate the Power*Suite Database Manager window shown below.

Power*Suite Database Manager	
Login Change Password Compact / Repair Make Backup	
PGEOLOGY V12 METRIC (Microsoft Access Driver (*.mdb))	•
Login Information	
User ID: pgeology Password:	
Minimize Exit Al	pply

- 2. Click on the down arrow beside the database selection field and select the database you wish to perform the management function.
- 3. Click in the User ID field to activate a flashing caret and type in your User ID. (Default is pgeology). Depress the Tab key to move the caret to the Password field.
- 4. Type in your old password. (Default is pgeology)
- 5. Click on the Change Password tab. This will activate the Password window shown below with a caret in the Old Password field.

Power*	Suite Database Manager
Login	Change Password Compact / Repair Make Backup
Nev	Old Password:
	Change Password
	Minimize Exit Apply

- 6. Type in your old password. Depress the tab key to advance the caret to the New Password field.
- Type in your new password. Depress the tab key to advance the caret to the New Password Again field. 7
- Type in your new password again. 8.
- Change Password Click on the button. If done correctly, a System message will appear stating Password 9. changed successfully shown below.



10. Click on the

button to acknowledge this window.

Exit 11. Click on the

button to escape the Power*Suite Database Manager. Database Manager – How to Compact / Repair your

PowerSuite Database.

The user cannot be connected to the database (Power*Log, Power*Core, Power*Curve, LAS Export Modules open) when this procedure is performed. If they are open please disconnect by selecting disconnect from the file menu.



1. Click on the Start menu selection, select Programs, select Power*Suite_V12, select Utilities and then click on the Database Management. This will activate the Database Management window shown below.

Power*Suite Database Manager
Login Change Password Compact / Repair Make Backup
PGEOLOGY V12 METRIC (Microsoft Access Driver (*.mdb))
Login Information
User ID: pgeology Password:
Minimize Exit Apply

- Click on the I down arrow beside the database selection field and select the database you wish to perform the management function.
- 3. Click in the User ID field to activate a flashing caret and type in your User ID. (Default is pgeology). Depress the Tab key to move the caret to the Password field.
- 4. Type in your password. (Default is pgeology)
- 5. Click on the Compact / Repair Tab. This will activate the Compact / Repair window.

	Power*Suite Database Manager	
	Login Change Password Compact / Repair Make Backup	
	Compact / Repair	
	Minimize Exit Apply	
Compact / Repair		d location in the window followed
	button. You will view the database file name and atabase Compacted successfully shown below.	a location in the window followed
by a cycloin meddage slainig De	System Information	
	Database Compacted successfully.	
	ОК	
OK		
7. Click on the but	to acknowledge this window.	
8. Click on the Exit but	ton to escape the PowerSuite Database mange	r
	- How to Backup vour Po	

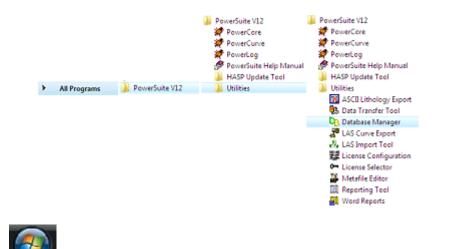
Database.

6.

7.

8.

The user cannot be connected to the database (Power*Log, Power*Core, Power*Curve, LAS Export Modules open) when this procedure is performed. If they are open please disconnect by selecting disconnect from the file menu.



Start button, select Programs, then select Power*Suite_V12, then select Utilities and Click on the 1. then click on the Database Management as shown above. This will activate the Power*Suite Database Manager window.

Power*Suite Database Manager
Login Change Password Compact / Repair Make Backup
PGEOLOGY V12 METRIC (Microsoft Access Driver (*.mdb))
Login Information
User ID: pgeology Password:
Minimize Exit Apply

- 2. Click on the down arrow beside the database selection field and select the database you wish to perform the management function. The default database is the PGEOLOGY V12 METRIC (Microsoft Access Driver) [*mdb]) shown in the above window.
- 3. Click in the User ID field to activate a flashing caret and type in your User ID. (Default is pgeology). Depress the Tab key to move the caret to the Password field.
- Type in your password. (Default is pgeology) 4.

5. Click on the Make Backup tab. This will activate the Make Backup window shown below.

Power*Suite Database Manager	Choose backup file name
Login Change Password Compact / Repair Make Backup	Save in: 🔁 backup 💽 🔶 🖆 📰 -
Choose backup file name	
Create Backup	
	File name: june 16, 2013 Save
Minimize Exit Apply	Save as type: Microsoft Access Database File (*.mdb) Cancel

- **button** to activate the Choose backup file name window. 6. Click on the file location
- 7. Utilize this window to select or create a new file name as well as direct the file to any current folder on your <u>S</u>ave

computer. Once done click on the button. This will choose or create the file and show the user the correct path and file name in the window as shown above.

Create Backup button. If created successfully a system message will be generated stating 8. Click on the Database Backed Up Successfully shown below.

				System Information	X
				Database Backed Up Succes	sfully!
				OK	
9.	Click on the	OK I	button to ackno	wledge this window.	
10.	Click on the	Exit	button to esca	oe the Power*Suite [Datal

Ctrl+N Ctrl+O

Chrl+P

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Chapter Seventeen – Survey View Module

This module allows the user to view a well in multi view angles. We give the user the ability to zoom in or out as well as up or down and view the well path in four (4) separate views. The views are **Plan view** (from the top), **Vertical Section view** (parallel to the target azimuth), **Cross Section view** (right angles to the target azimuth) and a **User Defined view** where the user can spin the view to any angle they wish. Each view can be captured separately or the capture can be taken of all four views at once. The screenshots taken in this module can then be printed with the striplog.

Operating Procedures

🛃 start

1. Click on the

button, select Programs, select POWER*SUITE_V12. Then, select Utilities and

click on the Survey View selection as shown above or if you are in the applications select Survey View Icon on the Toolbar OR go under the File Menu in Power*Log / Curve / Core and select the Survey Viewer. If you are not in our application (Log / Curve /Core) this will activate the Connect Database window shown below.

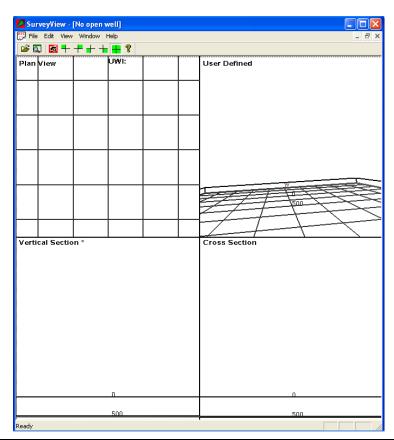
PowerSuite V12	File
🚀 PowerCore	Connect
🚀 PowerCurve	Disconnect
🚀 PowerLog	Access Registration
📌 PowerSuite Help Manual	New
📗 HASP Update Tool	Open
📗 Utilities	Close
ASCII Lithology Export	Import / Export
B Data Transfer Tool	ASCII Export
🕒 Database Manager	Backup
LAS Curve Export	Print Log
LAS Import Tool	Print Morning Report
License Configuration	Print Well End Report
🕶 License Selector	Print Reports to Word@
Metafile Editor	Print Setup
🛄 Reporting Tool	Exit
Survey Viewer	Survey Viewer
🔛 Word Reports	

Connecting to a Database...

- Highlight the database you wish to connect to by clicking on it. The default after loading the Power*Suite software is the PGEOLOGY V12 IMPERIAL (Microsoft Access Driver [*.mdb]). This will be the database which the Power*Suite export files will be automatically imported to.
- Type in your User ID. The default User ID is "pgeology*" and is displayed as the default in this field. The user can simply Tab to the Password field.
- 3. Type in your Password. (The default Password is "pgeology").

Connect Database	
Databases:	
PGEOLOGY V12 IMPERIAL (Microso PGEOLOGY V12 METRIC (Microso	
User ID: pgeology	Connect
Password:	Cancel

4. Click on the **Connect** button to complete the connection or **press** the **Enter key** on your keypad. This will activate the Survey View window shown below.



Note: If no grid System is selected then the basic grid on the Plan View and User defined view is a 15,000 foot square with each division being 1,500 feet.

File Menu- Save Screen

Save Screen Selection - This allows the user to capture and save a screen shot of the survey view at the time of File

Save Screen	
New Survey	
E×it	

产 🔍 selecting. The User can also Click on the Icon on the tool bar. The user can save up to five (5) screen shots. These screen shots can be printed along with the striplog in our Power*Suite applications (Log, Curve, Core). The screen shots will be saved in the PowerSuite_V12/SurveyViews/UWI folder for the well. A screen capture of the

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ders	×	Name 🔺	Size	Туре	Date Modified
🗉 🚞 PowerSuite_V12	~	Contemporary Conte	6,124 KB	BMP File	12/13/2011 3:51 PM
🛅 Database	_	Surveys_ENDVIEW.BMP	7,141 KB	BMP File	11/29/2011 12:20 PM
🗷 🧰 hasp tools		Surveys_PERSPECTIVE.BMP	7,141 KB	BMP File	11/29/2011 12:20 PM
Location maps		Surveys_TOPDOWN.BMP	7,268 KB	BMP File	12/15/2011 3:24 PM
🛅 logo		Surveys_VERTICALSECTION.BMP	7,141 KB	BMP File	11/29/2011 12:20 PM
printer settings					
🗉 🧰 report					
🗉 🧰 reporti					
C reportm					
i reportmi					
🗉 🫅 SurveyViews					
101C014H094B0800					
100151806603W600					
102010507613W600					
prog surveys					
🗉 🧰 symbol					
🗉 🧰 symbolm					
🛅 syslog	_				
syslog_core					
🛅 syslogi					
syslogi_core					
🗉 🧰 system					

directory structure is shown below.

File Menu- New Survey

New Survey Selection – This selection allows the user open a set of surveys for a well (both prognosis and actual surveys) and see them plotted in the 4 views available.

How to Open a set of Surveys for a well.

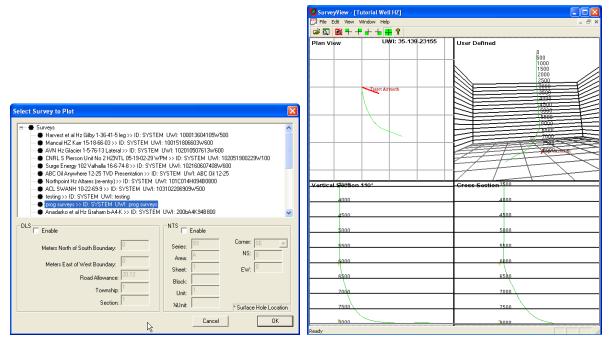
1. This will activate the survey view window shown above. **Click** on the **Image New Survey button** on the toolbar **or click** on **New Survey** from the **File** menu selection to activate the Open survey window.

	File Save Screen New Survey Exit		
Select Surveys			×
Meters East of West Boundary:	0 Series: 0 Series: 0 Series: Area: Sheet: Block: 1 Unit: 1 XiUnit:	A 1 1 1	Corner: SE

2. Click on the + beside the Surveys to expand the list of surveys that are in the database and then select the well by highlighting it with the mouse pointer. Then you may want to enable the check box and fill in the DLS coordinates or the NTS values as indicated in the window shown below. If your survey system does not fall into these survey systems then leave them unchecked and your well will be in the centre of a generic grid system as

viewed in the Plan and user defined views. Then **click** on the **button** to activate the survey view window with your surveys from this well.

No Survey System Example



If you do not enable the check boxes beside the DLS or NTS your Plan view and User-defined view will have a generic grid system marked and your well centre will be right in the middle of the plot.

3. Click on the **DK** button. If done correctly and you have sufficient surveys you should get the survey window filled in with the four (4) views of your well bore. You should see something similar to one of the Survey window shown above.

Edit Menu - Properties



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This menu item allows the user to customize the look of the views. There is something to note here that if you make changes to one view they all change so beware.

1. Click on the Properties selection under the edit pull down menu or click on the

icon on the tool bar. Another way to activate this menu is to right click on the view and select the properties option from the pop out menu. This will activate the edit window for the survey view application as shown on the next page.

Overview of Properties Window

Properties	
Display Settings	
Point Display Size: 5 Image: Crid Walls Point Image: Crid Labels Prognosis Image: Crid Labels Azimuth (Vertical Section Plane) Image: Crid Labels Survey Text Image: Crid Labels Wireframe Image: Crid Labels y: 100	h South East Vest S: S E: E V: V x: 0 $x: 50$ $x: -100y: -70$ $y: 0$ $y: 0$
	increment Lithology Column offset from borehole EW: 10 Column Size: 20 NS: 10 Opacity (0-1): 0.5
Point Color Back Co	lor Label Text Color
Coordinate System -DLS Enable	-NTS
Meters North of South Boundary:	Series: 93 Corner: SE
Meters East of West Boundary:	Area: A NS: 0
Road Allowance: 20.12	Sheet: 1 EW: 0
Township:	Block:
Section: 1	Unit: J ¹
	¼ Unit
	OK Cancel Apply

Point Display Size: ³ The **Point Display Size** setting allows the user to define the size of the survey points in the survey view displays. If the Point Display is not checked, it will also control the thickness of the line drawn to represent the well path.

Point The display **Point** setting changes the display from survey point balls with a thin line connecting the survey balls to a solid line view.

Prognosis The display **Progonosis** setting turns on/off the set of surveys that made up the original prognosis and displays that information. These surveys have to be entered into the Prognosis portion of the survey report in our main applications (Log, Curve and Core) and then calculated.

Azimuth (Vertical Section Plane) The display Azimuth setting allows the user to turn on/off the target azimuth of the well that has to be entered into the Survey Report window. Ultimately, the master survey group controls this display.

Survey Text The display **Survey Text** setting turns on/off survey indicators on the **Plan view only** and these indicators illustrate every 10th survey point in the Master survey group.

Wireframe The display Wireframe setting changes the survey point balls from a solid color to a wire frame symbol.



The **Grid Walls** enables the user to turn on/off the exterior walls of the grid system. These walls are displayed in three (3) of the views. These walls can be displayed in the User-defined, Target azimuth and Cross section views.

and Labels			
N: N	S: S	E: E	W: W
x 0	x 0	x 100	x -240
<u>у:</u> 100	y: -240	y: 0	y: 0

This **Grid Labels** enables the user to control the positioning and label verbiage in two (2) of the views. These labels are displayed in both the Plan view and the User-defined view but cannot be controlled independently. The labels (in this case are N, S, E and W) are displayed in their default locations. The X axis is left / right with a + value moving it to the right and a – value moving

it to the left. The Y axis is up / down with a + value moving it up and a - value moving it down.

- Line Sizes
Major: 3
Minor:

CHARLEN IN

The **Line Sizes** enables the user to change the line thickness on the Plan and user-defined surface grid indications as well as the line thickness in the grid walls. Major lines encompass the exterior borders of a Section in the DLS system, a Unit in the NTS system and the exterior of a no survey system choice. All other lines on the views are minor lines.

-Scale offset from boreho	ble
EW: 60	Increment
NS: 10	200

The **Scale** enables the user to control where the depth scale is positioned and the increment for the depth scale. The depth Scale is displayed in all views but the Plan view. A positive (+) value in the **EW field** moves the scales to the East with a negative (-) value moves the scale to the West. A positive (+) value in the **NS field** moves the scales to the North with a negative (-) value moves the scale to the South. The **Increment field** allows the user to specify what the grid increment will be.

- Lithology		
offset from boreho	le	
EW: 35	Column Size:	20
NS: 10	Opacity (0-1):	
110. 1		

-DLS	🔽 Enable
Meters North of South Boundary:	846.53
Meters East of West Boundary:	735.40
Road Allowance:	20.12
Township:	77
Section:	25

The Lithology Offset enables the user to control where the Interpretive Lithology column (displayed in TVD) is positioned. The Interpretive Lithology column is displayed in all views but the Plan view. A positive (+) value in the **EW field** moves the Interpretive Lithology to the East with a negative (-) value moves the scale to the West. A positive (+) value in the **NS field** moves the Interpretive Lithology to the North with a negative (-) value moves the scale to the South. The **Colum size** field changes the with of the Interpretive Lithology displayed in the views. The **Opacity field** changes the ability to see through the column to view other data.

The **DLS** section allows the user to modify the settings that were used when you originally set up the Survey view for this well. Remember that this is the surface co-ordinates.

File

Save Screen

New Survey

Exit

NTS 🔽	Enable	
Series:	94	Corner: NW
Area:	G	NS: 165.3
Sheet:	8	EW: 578.7
Block:	L	
Unit:	1	
¼Unit:	d	* Surface Hole Location

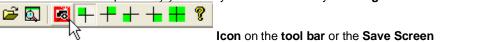
The **NTS** section allows the user to modify the settings that were used when you originally set up the Survey view for this well.

View Menu Plan view (isolated)

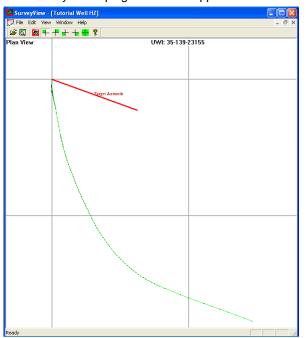
1. Click on the Plan View selection under the View pull down menu or click on the

View Plan View	icon on the tool bar. This will Isolate the
Toolbar Status Bar User Defined Vertical Section Cross Section ✔ Multi Views	 plan view and make it bigger. The user can then use the scroll button on the mouse to zoom in or out of the image (up scroll to zoom out and down scroll to zoom in). The user can also use the up / down arrows on the keypad to move the image up or down or the left / right arrows on the keypad to move the image left or right. Click on the properties selection under the Edit pull down menu or right click on the image and select properties this would activate the properties window where the user can change what is shown on the view but will be applicable to all views.

4. Once the view is set up the way you want you can save this by Clicking on the

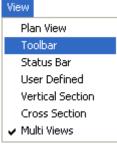


Selection under the **File pull down menu**. This will save the screen capture and give you the ability to print it out on your striplog in all of our applications.



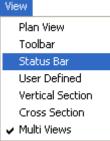
Toolbar Selection

1. Click on the Toolbar selection under the View pull down menu to turn on or off the toolbar. The toolbar is located under the Menu selections



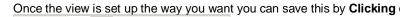
Status Bar Selection

2. Click on the Status Bar selection under the View pull down menu to turn on or off the Status bar. The Status bar is located on the bottom of the Survey View window.



User defined view (isolated)

View	1. Click on the User Defined View selection under the View pull down menu or click on			
Plan View				
Toolbar	the icon on the tool bar . This will Isolate the			
Status Bar	User Defined view and make it bigger.			
User Defined	2. The user can then use the scroll button on the mouse to zoom in or out of the image (up scroll to zoom out and down scroll to zoom in). The user can also use the up / down			
Vertical Section	arrows on the keypad to move the image up or down. The user can use their mouse to			
Cross Section	rotate the view by clicking and dragging within the view to rotate the view.			
🗸 Multi Views	3. Click on the properties selection under the Edit pull down menu or right click on the image and select properties this would activate the properties window where the user			
can change what	at is shown on the view but will be applicable to all views.			
4. Once the view is	s set up the way you want you can save this by Clicking on the			

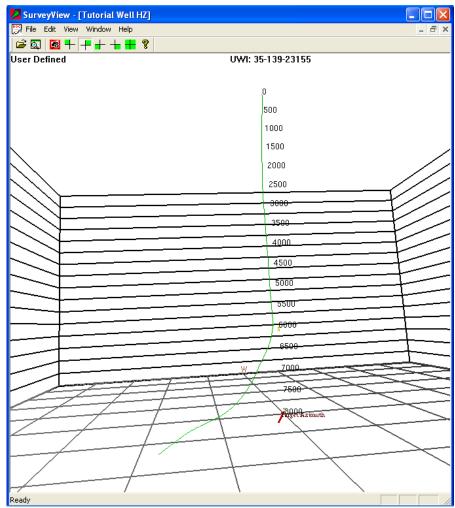




Icon on the tool bar or the Save Screen

Selection under the File pull down menu. This will save the screen capture and give you the ability to print it out on your striplog in all of our applications.





Vertical Section view (isolated)

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1. Click on the Vertical Section View selection under the View pull down menu or click on the

icon on the **tool bar.** This will Isolate the plan view and make it bigger. This view is a display of the well bore parallel with the Vertical Section indicated in the Survey window for the Master Survey group.

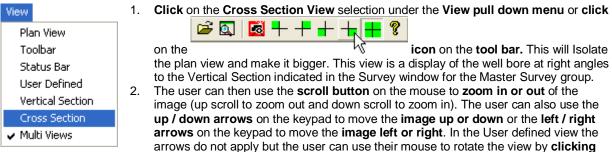
- 2. The user can then use the scroll button on the mouse to zoom in or out of the image (up scroll to zoom out and down scroll to zoom in). The user can also use the up / down arrows on the keypad to move the image up or down or the left / right arrows on the keypad to move the image left or right.
- 3. Click on the properties selection under the Edit pull down menu or right click on the image and select properties this would activate the properties window where the user can change what is shown on the view but will be applicable to all views.
- 4. Once the view is set up the way you want you can save this by **Clicking** on the



Icon on the tool bar or the Save ScreenSelection under the File pull down menu. This will save the screen capture and give youthe ability to print it out on your striplog in all of our applications.

A SurveyView - [prog surveys]		
Vertical Section 134.9"	UWI: 100121301415W500	
	0111. 10012130141311300	
500		
700		
900		
1100		
1500		
D		
1700		
1900		
2300		

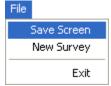
Cross Section view (isolated)



and dragging within the view to rotate the view.

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- Click on the properties selection under the Edit pull down menu or right click on the image and select properties this would activate the properties window where the user can change what is shown on the view but will be applicable to all views.
- 4. Once the view is set up the way you want you can save this by Clicking on the

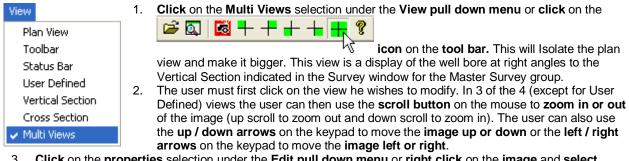


Icon on the tool bar or the Save Screen

Selection under the **File pull down menu.** This will save the screen capture and give you the ability to print it out on your striplog in all of our applications.

		- 8
Cross Section	UWI: 100121301415W500	
1100	M .	
	. 10	
	111	
1300		
	. (11)	
1500		
1700	481.	
	1111	
	illi	
1900	111	
	IIII	
2100		

Multi Views



- 3. Click on the properties selection under the Edit pull down menu or right click on the image and select properties this would activate the properties window where the user can change what is shown on the view but will be applicable to all views.
- 4. Once the views are set up the way you want you can save this by Clicking on the





Selection under the **File pull down menu**. This will save the screen capture and give you the ability to print it out on your striplog in all of our applications.

SurveyView - [Tutorial Well HZ]	
💬 File Edit View Window Help	_ 8 ×
🖙 🖾 🖶 🕂 🕂 🛨 👫 🖇	
Plan View UWI: 35-139-23155	User Defined 0 500 1000 1500 2000 2500 3500 3500 3500 4000 5506 5506 5506
	₩
Vertical Station 110°	Cross Section 3500
4000 4500 5500 5500 6000 6500	
7500	7500
ikono	Iknon
, Ready	