

POWER SUITE

Version 12 Addendum Manual



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Overview

Version 12 Revisions

We have added numerous functionalities into the **Striplog printing**. The regular **Striplog Title pages** have been modified to reflect the changes in the Well Record to print both the **Surface Hole Co-Ordinates** and the **Bottom Hole Co-Ordinates** along with the **Wireline or LWD logging runs and tools** information block.

We have given the user the ability to **print a location map** in both the reports and the Striplog.

We have also given the user the ability to **print out the 5 survey views** produced from the New Survey View Module to the Striplog printing. We have also added the ability to print the new EUB UWI format to the Striplog Title pages.

We have added the ability to print all 4 Surveys views to the Print to Word format and our regular Print Well End Reports.

We have added another display option on the **Directional Survey Points** layer (on the right click menu) where the user can print the survey along with the choice of **displaying the TVD depth values** and / or **SS depth values** or neither depth value.

We have revised **Well Record** with the **Bottom Hole Co-ordinates** and **Surface Hole co-ordinates** and displayed these values in both the Striplog header and well end reports.

We have added the ability to display **Logarithmic curves scales in hybrid manner** such as .2 to 2000 for Resistivity curves or any hybrid display of your choice.

We have added the ability to display the **curve scales either horizontally or vertically** on the right click menu for a curve layer in the main body of the log. The header scales are static as they were.

We have added the ability to display the **TVD and or the SSL depths** for each individual survey point. You can modify the display from the System Options Display tab or on the right click menu selection on the directional survey points layer.

We have modified the **Slide / Rotate builder** to accommodate **Toolface orientation** and we will now display the toolface orientation of a slide on the slide rotate layer where the S used to be displayed. If no Toolface is entered we will revert back to the old representation of an S.

We have added the ability to **Import Slides and Toolface orientation** from a slide sheet acquired from a directional driller.

We have modified the **System Options - Display tab** to allow the user another interface to change the Display options for the Survey Points.

We have opened up all the annotation layers to all views (TVD, SS, OH & VS) so that the user can more easily place their annotations for the specialty views.

We have given the user the ability to **change the color of the cored interval** from a solid black to any color the user would like. This color change allows the viewer of the log to see the start and stopped of the coring intervals if they were a continuous core.

We have added the ability to **create links to other data** that cannot be easily displayed on the log. This data has to be formatted into a windows compatible display format and can be opened with a windows application such as a Word document, XL spreadsheet or any graphics. These links can be added to all of our layers.

We have modified the casing shoe display on the casing layer to be able to **scale the shoes** so that on wide tracks they do not take over the whole track. You can find this scaling feature on the right click menu.

We have added the **Vertical Section (VS) module** to Power*Curve. This module if purchased will manipulate Power*Curve depths on a click of a mouse. The user can change the depth from Measured

Depth (MD) to Vertical Section (VS) depth and Open Hole (OH) depth as long as the surveys have been calculated and the last casing string has been entered.

We have added the Survey View module. This module if purchased will transform the survey data into 4 separate views which you can print from the Well End reports as well as the striplog. You will get a detailed plan view (top down) of your well bore with respect to the survey either the DLS or NTS system or just a grid system. You will also get a Vertical Section (parallel to the Target Azimuth) and Cross Section View (right angles to the Target Azimuth) and a cube view which you can rotate by mouse pointer actions. All views have the ability to go right and left and up and down manipulated by your arrow keys on your keypad and zoom in and out using the mouse wheel on your mouse.

When you are creating a new Well / Log using an existing log template. We have modified the **Add Curves window to use as default the curve scales** that were used in the exiting Log template. This should make it easier to start a new well when you have a lot of complex curve scales.

Modified the **Survey Report** and **Survey Points Window** and reversed the E/W and N/S fields so they correspond to the survey data received from the Directional drillers.

We have modified the Work Schedule window to expand the number of characters the Contractor field holds from 50 to 100 characters.

We have modified the **LAS Import** (both right click and Import module) will now be able to accept both LAS Version 2 and LAS **Version 3 export files**. Besides curve data we will also be able to import **Formations Tops, Surveys, Tests, Well and Drilling information** which have been defined in the ASCII blocks in the LAS File.

We have added a **Survey Prognosis Report** so the user can add the prognosed survey points (either manually or by importing all the data through the Directional Survey Import New Method Module. This will display the prognosed drilling program in the Survey View Module.

We have added the ability **to print all 4 Surveys views to the Print to Word format** and our regular **Print Well End Reports**.

We have also added the use of **existing curve scales and attributes from existing logs** for curves that are not recognized within the system curve definitions. This should make the creation of new logs much easier than before.

We have added another **system log for both Metric and Imperial for Gamma ray curves only**.

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File Menu – Import Export Selection

Import / Export Selection

LAS Import

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 on the next page 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.M          178.46040   :START DEPTH
STOP.M          2206.44720  :STOP DEPTH
STEP.M          0.15240    :STEP LENGTH
NULL.           -999.22000  :Null value
COMP.           ABC Exploration Company :Company
WELL.           ABC et al Anywhere      :Well
FLD.            Anywhere                :Field
LOC.            111/09-12-015-5W4M      :Location
PROV.           Alberta                 :Province
DATE.           14-MAR-96               :Run Date
UWI.            111012601505W400        :Unique Well ID
LIC.            12356                   :License Number
SRVC.           Anywhere Logging Company :SERVICE COMPANY
~CURVE INFORMATION
#MNEM.UNIT      API CODE   CURVE DESCRIPTION
DEPT .M          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
LLD .OHMM        01 220 10 00 : 5 Latero-Log Deep (Resistivity)
LLS .OHMM        01 220 09 00 : 6 Latero-Log Shallow (Resistivity)
HD .MM           01 280 01 00 : 7 Hole Diameter
TDEP .M          01 636 00 00 : 8 Tide Depth
~PARAMETER INFORMATION
#MNEM.UNIT      VALUE      DESCRIPTION
RUN.            ONE        :Run Number
PDAT.           GROUND LEVEL :Permanent Datum
~OTHER INFORMATION
#MNEM.UNIT      VALUE      DESCRIPTION
~A
DEPT  GR  DT  SP  LLD  LLS  HD  TDEP
178.4604 52.4498 182.4146 96.9375 3.8158 0.1481 210.3713 178.46042
178.6128 47.9652 182.4146 96.6250 3.2990 0.1484 210.3713 178.61282

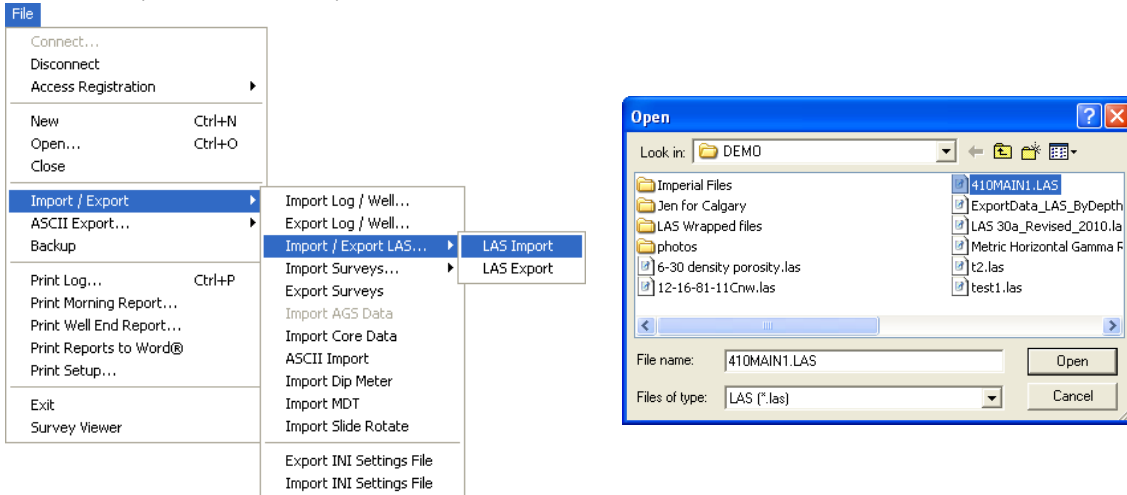
```

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.

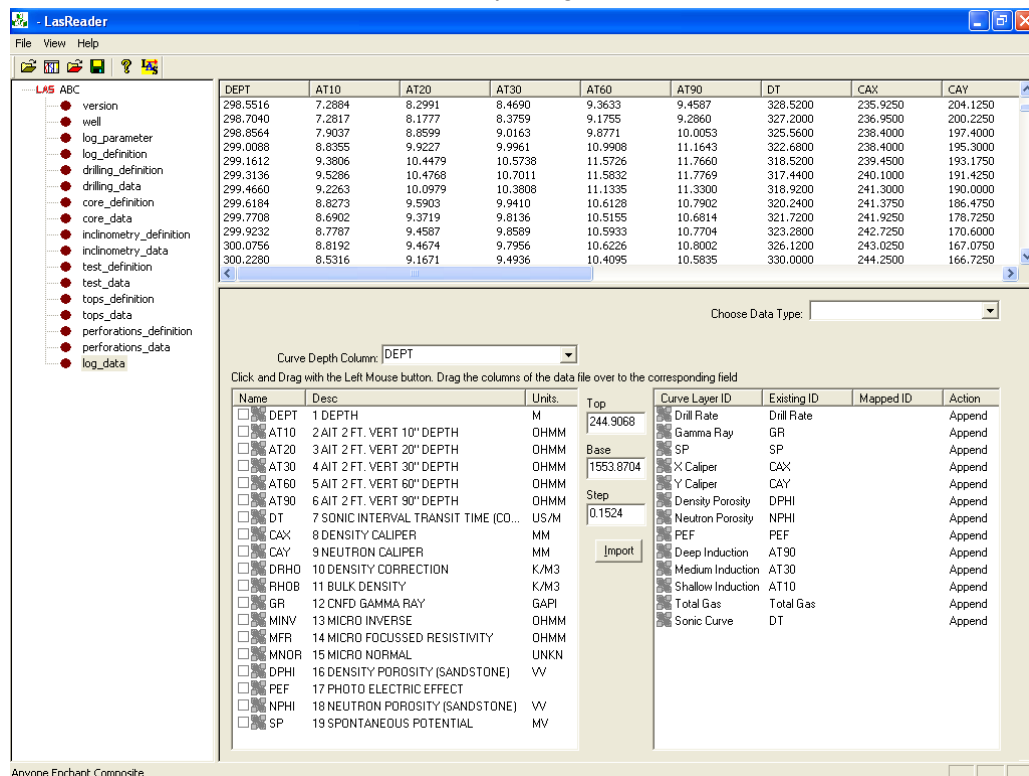
How to Import an LAS data File

If the file format is LAS V3.0 then we can import, beside curve data, Formation, Test, Inclination 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.



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  **Open** 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.



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, Inclination, 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	166.7250
301.7520	6.7209	7.2415	7.4650	8.2154	8.3067	337.4400	256.2500	166.7250
301.9044	6.7395	7.2282	7.4995	8.2838	8.3682	338.4400	257.3000	166.7250

version
well
log_parameter
log_definition
drilling_definition
drilling_data
core_definition
core_data
inclinometry_definition
inclinometry_data
test_definition
test_data
tops_definition
tops_data
perforations_definition
perforations_data
log_data

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
☐ DEPT	1 DEPTH	M
☐ AT10	2 AIT 2 FT. VERT 10" DEPTH	OHMM
☐ AT20	3 AIT 2 FT. VERT 20" DEPTH	OHMM
☐ AT30	4 AIT 2 FT. VERT 30" DEPTH	OHMM
☐ AT60	5 AIT 2 FT. VERT 60" DEPTH	OHMM
☐ AT90	6 AIT 2 FT. VERT 90" DEPTH	OHMM
☐ DT	7 SONIC INTERVAL TRANSIT TIME...	US/M
☐ CAX	8 DENSITY CALIPER	MM
☐ CAY	9 NEUTRON CALIPER	MM
☐ DRHO	10 DENSITY CORRECTION	K/M3
☐ RHOB	11 BULK DENSITY	K/M3
☐ GR	12 CNFD GAMMA RAY	GAPI
☐ MINV	13 MICRO INVERSE	OHMM

Curve Layer ID	Existing ID	Mapped ID	Action
☒ Drill Rate	Drill Rate		Append
☒ Gamma Ray	GR		Append
☒ SP	SP		Append
☒ X Caliper	CAX		Append
☒ Y Caliper	CAY		Append
☒ Density Porosity	DPHI		Append
☒ Neutron Porosity	NPHI		Append
☒ PEF	PEF		Append
☒ Deep Induction	AT90		Append
☒ Medium Induction	AT30		Append
☒ Shallow Induction	AT10		Append
☒ Total Gas	Total Gas		Append
☒ 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.

Curve Depth Column: DEPT

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

Top
244.9068

Base
1553.8704

Step
0.1524

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

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.

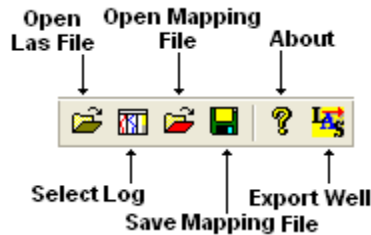
Choose Test Run#: 1

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.

The **Import** 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

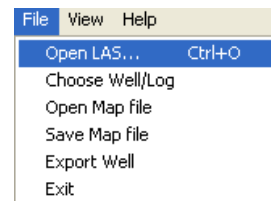


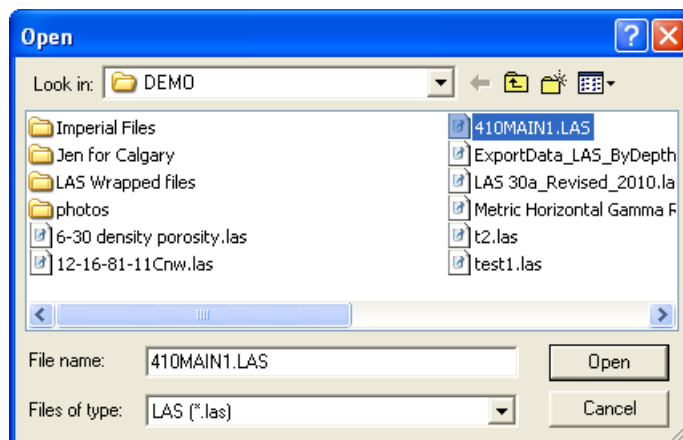
LAS Reader File Menu

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

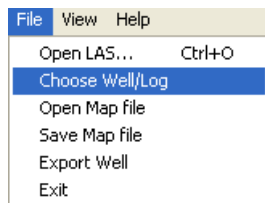




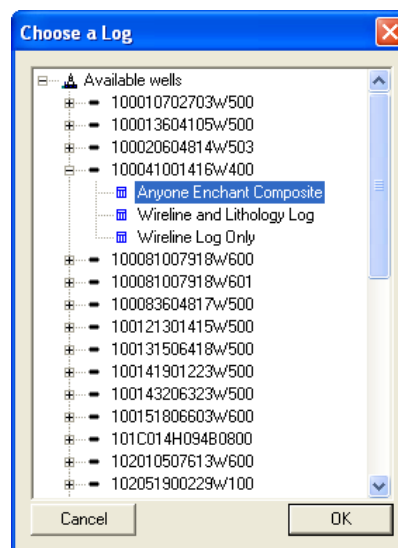
File Menu - Choose Well / Log Option

1. Select **Choose Well / Log**, under the **File** menu selection if you would like to open a different Well / Log 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 window



2. **Click** on the **+** **beside available wells** to open the tree of the wells in your database.
3. **Click** on the **dot beside the UWI** of the well to show 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 **OK** button. This will open another log / well for you to import data into or export data out of.



or



log

list

the

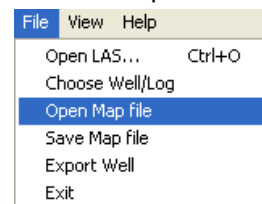
File Menu – Open Map file Option

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 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.

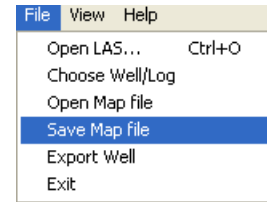


N.B. The file extensions are ***.cvm** for curve data, ***.ftm** for formation data, ***.sgc** for survey group data, ***.inc** for survey data, ***.cdm** for core data, ***.tgc** for DST job data, and ***.tmf** for DST interval data.

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 import drop box selection.

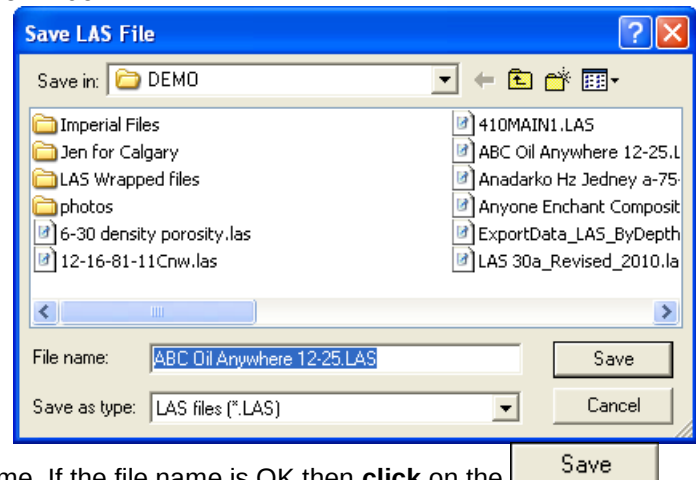
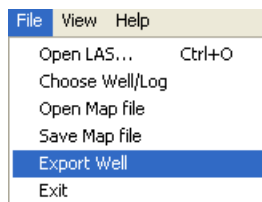


to

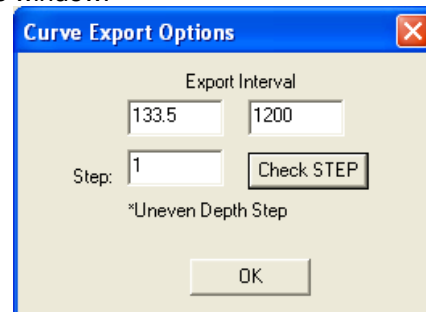
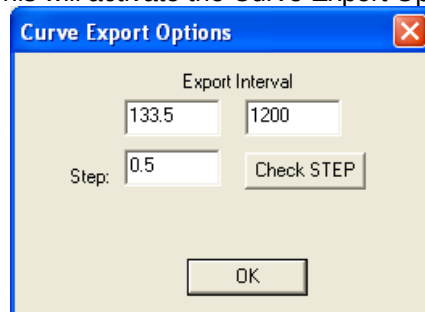
File Menu – Export Well Option

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.



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



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.

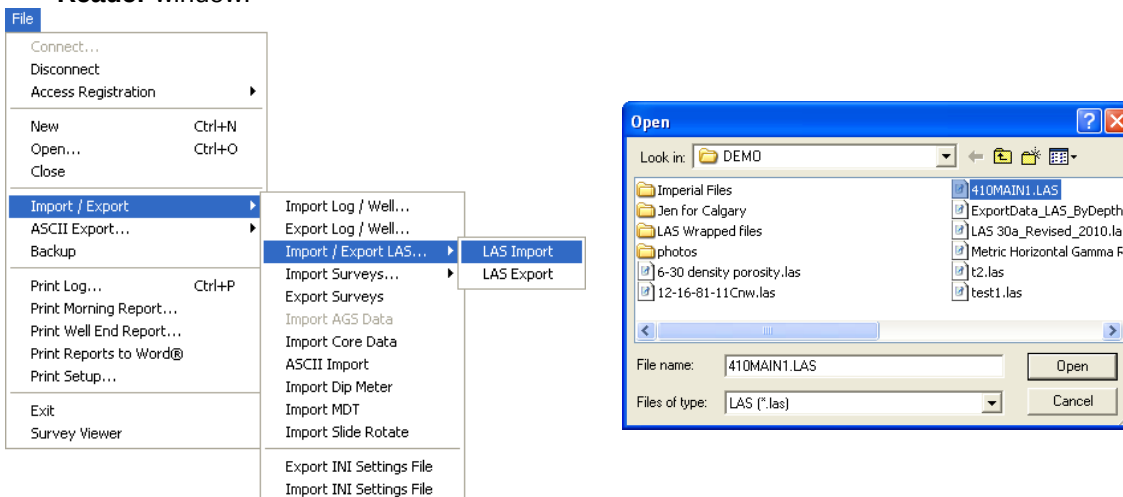
4. **Click** on the **OK** **button** when you are done. This will activate a please wait window and when the window disappears the file has been created in the folder you have chosen.

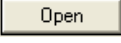
File Menu – Exit Option

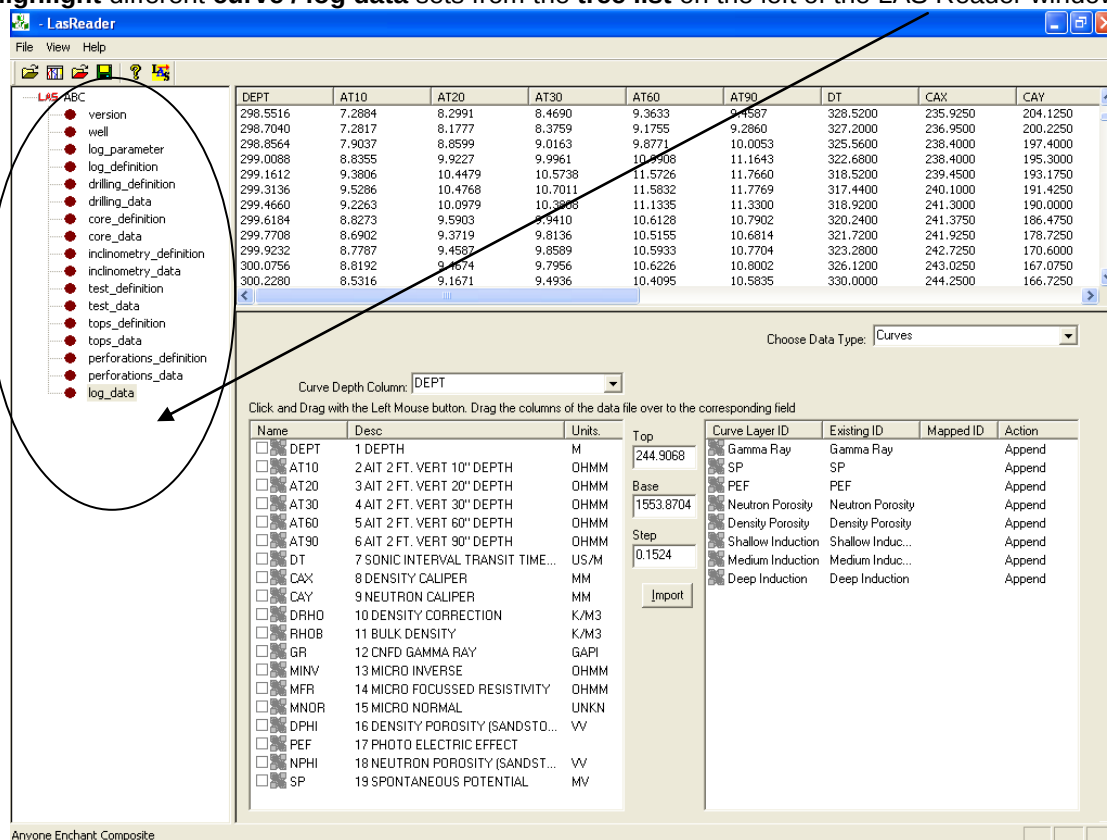
This allow the user to exit the LAS Reader application

Importing / Mapping of LAS Curve data.

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.



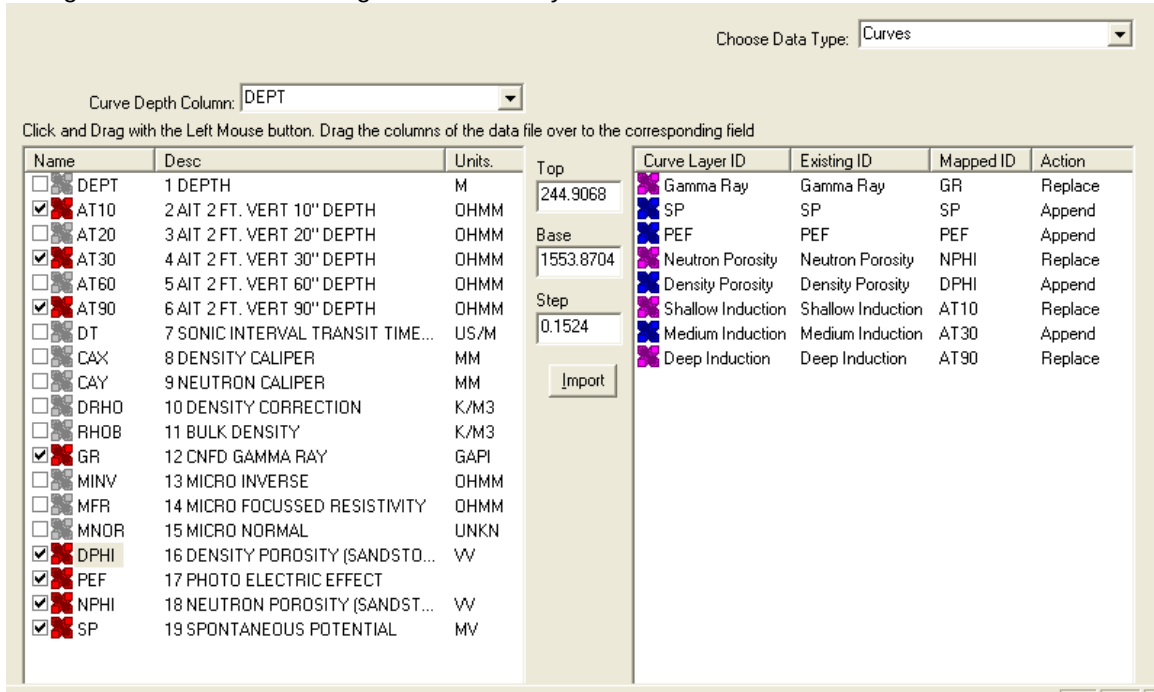
2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then click on the  **Open** button. If your log is open at the time you will see something similar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



- 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.

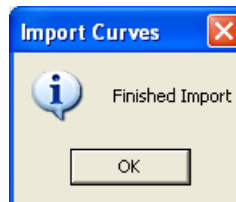
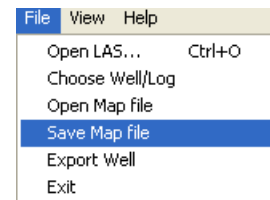
- Repeat the Clicking and Dragging of curves to curve layers** until all have been mapped. The user can also bring over new curves to the well without having a layer to show the curves on. You would then have to associate that curve to a new layer at a later date. This would be done through the log configuration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

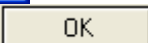


- The user can save this mapping procedure at this time by **clicking on**

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 Curve data again.

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

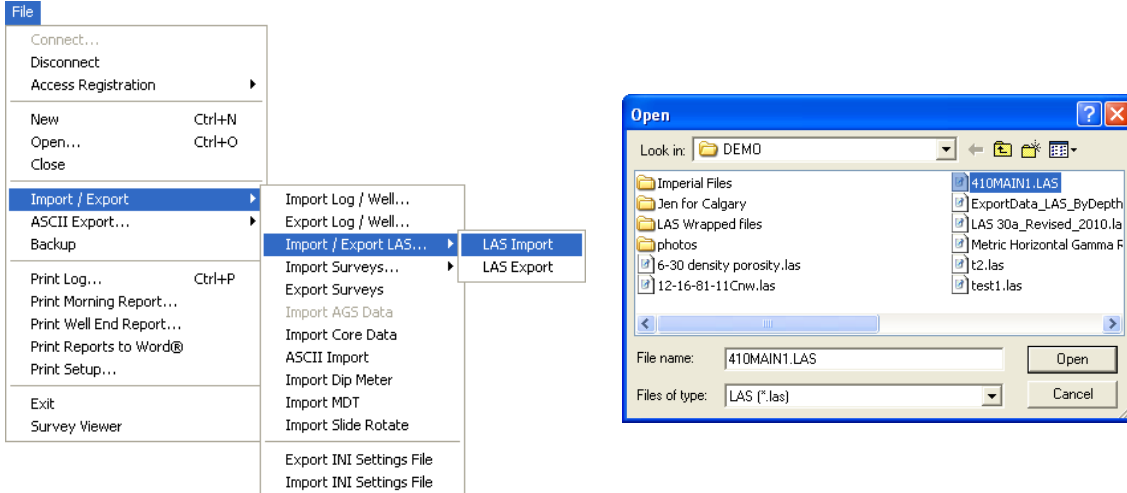


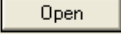
- Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File menu** and **select the Exit** option to close the LAS Reader Window.

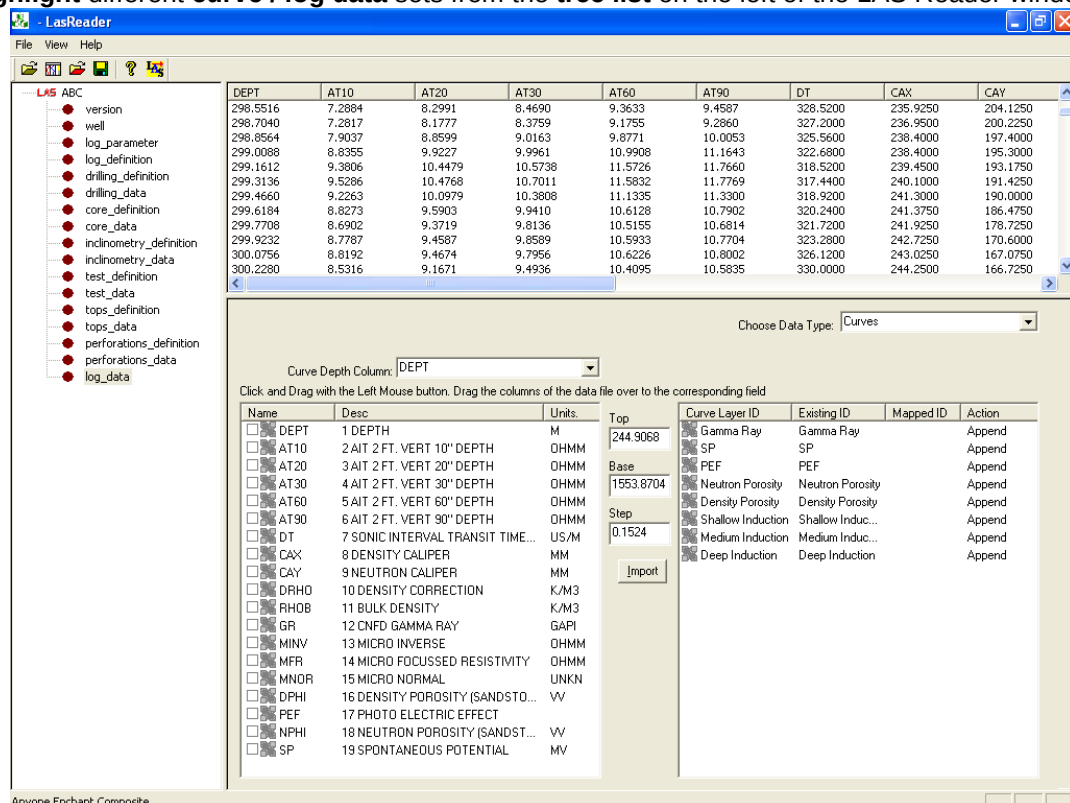
Import LAS curve data from a mapped file.

- 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

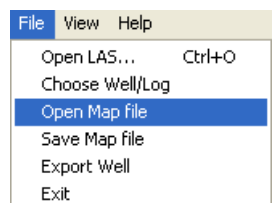
the pop out-menu or simply **click** on the  **LAS button**, on the **Toolbar**, to activate the **LAS Reader** window.



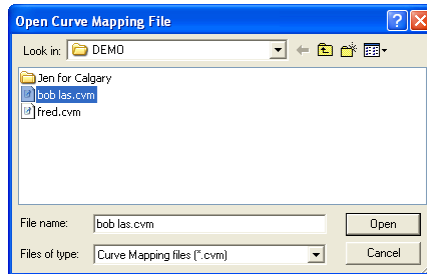
- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the  **button**. If your log is open at the time you will see something similar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



- 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.



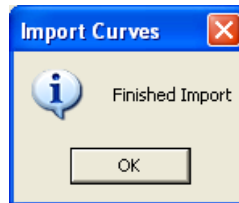
N.B. The file extensions are ***.cvm** for curve data, ***.ftm** for formation data, ***.sgc** for survey group data, ***.inc** for survey data, ***.cdm** for core data, ***.tgc** for DST job data, ***.tmf** for DST interval data ***.sdm** for sample descriptions and ***.cdm** for Core Description data.



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.

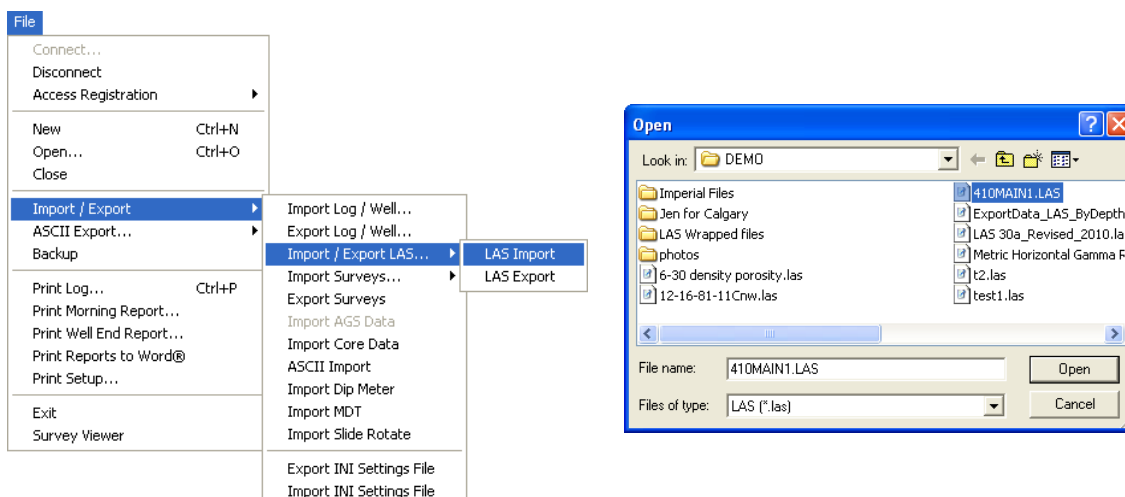
5. The user can map more curves on the left side of the window **by clicking and dragging** the **curve** you wish to import to the **curve layer** on the right side and release it when the layer becomes highlighted.
6. **Click** on the **Import** button. You will then be prompted with a system message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



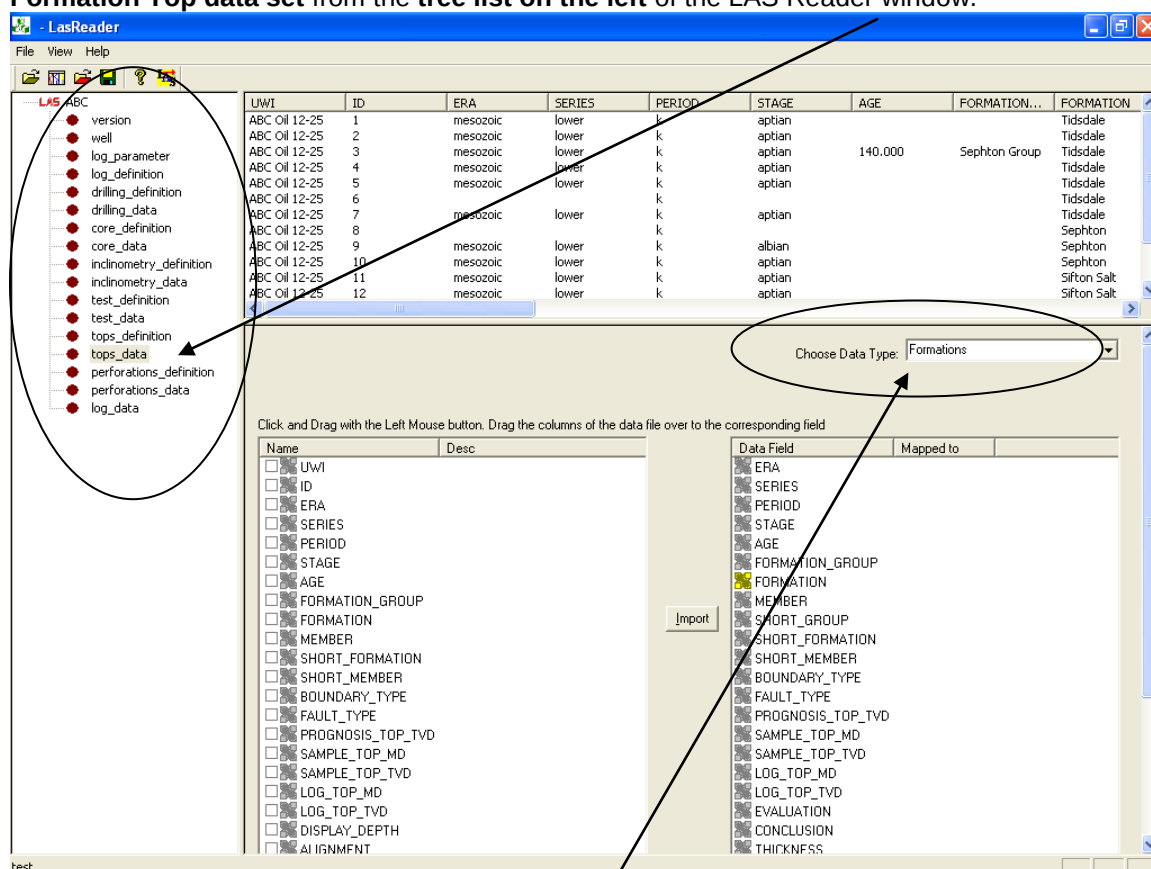
7. **Acknowledge** the Finished Import message. **Click** on the **OK** button and then **click** on the **Exit** button to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

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.



- 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 **Open** 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.

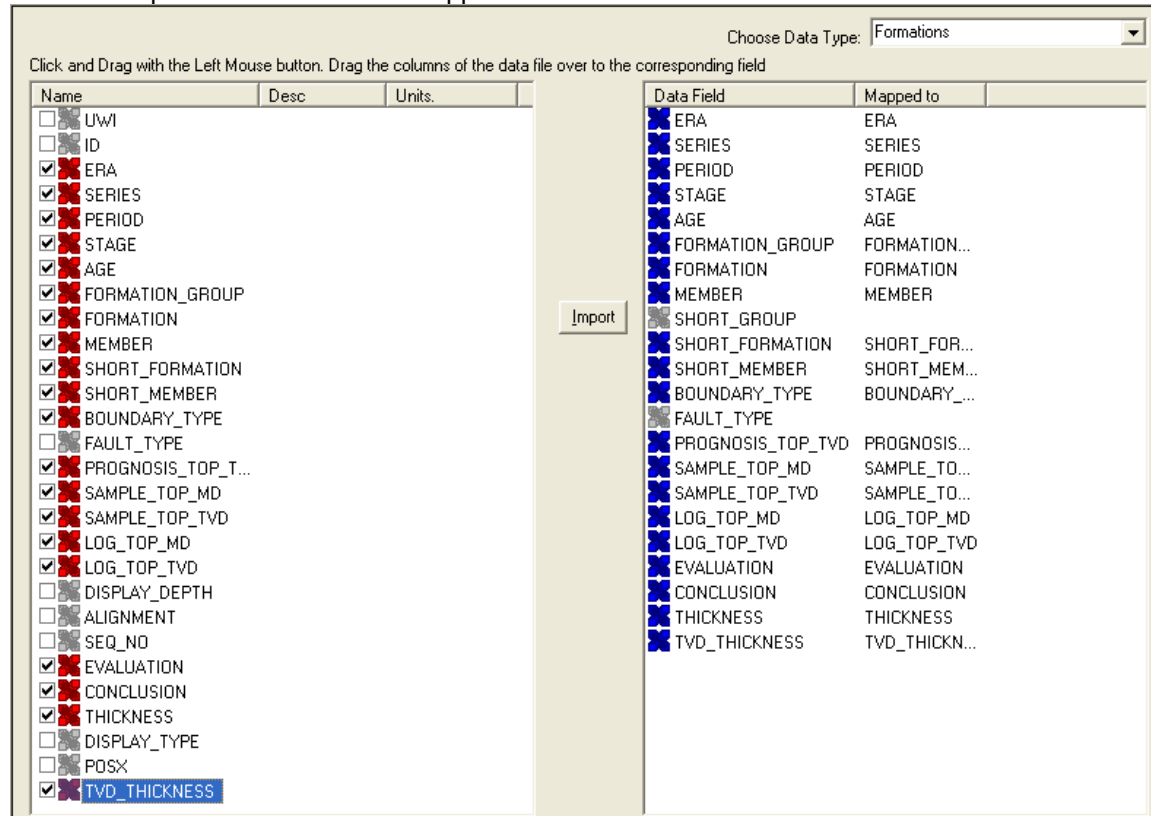


- Select **Formations** from the **Choose Data type** drop box.
- On the lower left side of the window **click and drag** the **Formation top data** you wish to import to the **formation data type field** on the lower right side and release it when the data field becomes

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

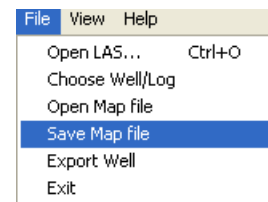
N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

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



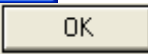
6. The user can save this mapping procedure at this time by **clicking** on

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 Formation top data again.



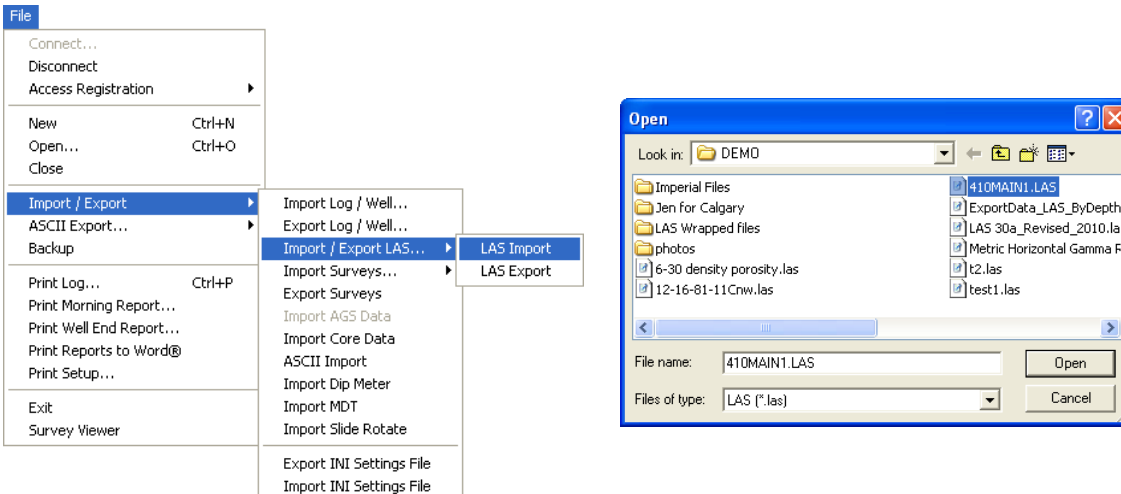
7. **Click** on the  button. You will then be prompted with a system message after the import has finished.



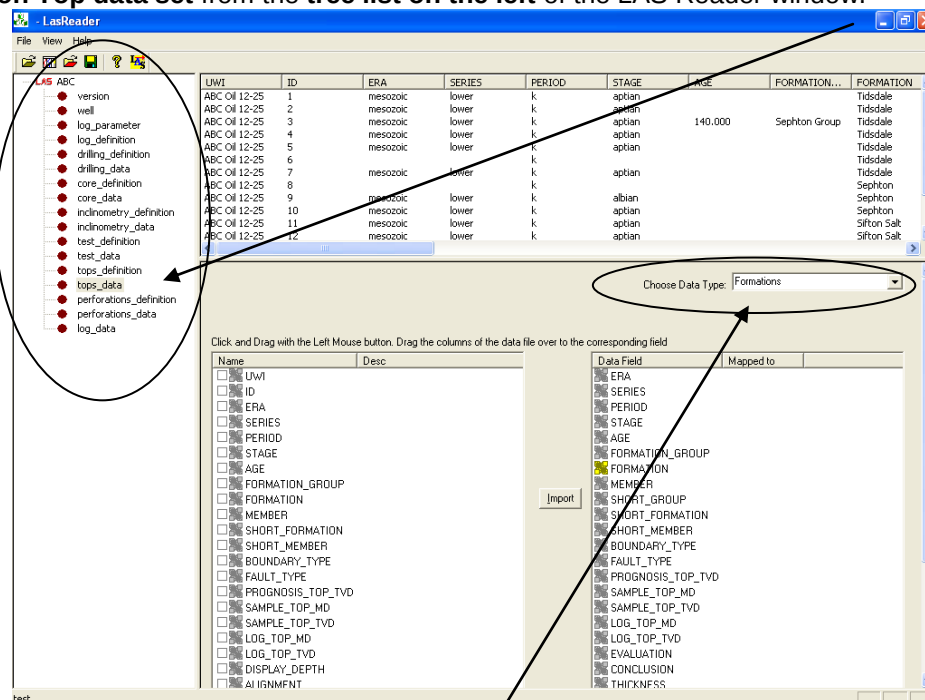
8. **Acknowledge** the Finished Import message. **Click** on the  button and then **click** on the  button to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window

Import LAS Formation Tops data with a Mapped file.

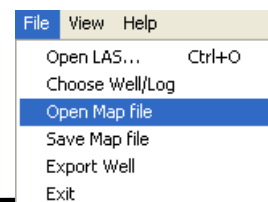
1. With your well open in Power*Log / Curve or Core Click on the **File** pull down menu selection and click on **Import / Export** and then click on **Import / Export LAS** and then select **LAS Import** from the pop out-menu or simply click on the  **LAS button**, on the **Toolbar**, to activate the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



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 **Open** 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.

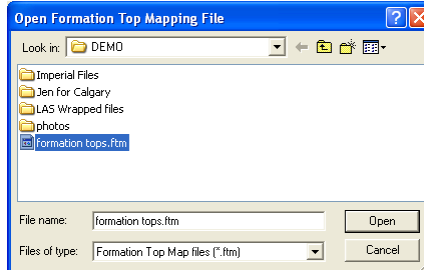


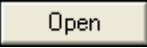
3. Select **Formations** from the **Choose Data type** drop box.
4. Select **Open Map file**, under the **File** menu selection if you would like to open a saved mapping file for a particular data set. Or, you can click on



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.

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.

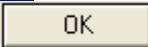


5. **Select** the mapping file with the ***.ftm** saved from previous imports of similar data to the database and **click** on the  **button**.

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

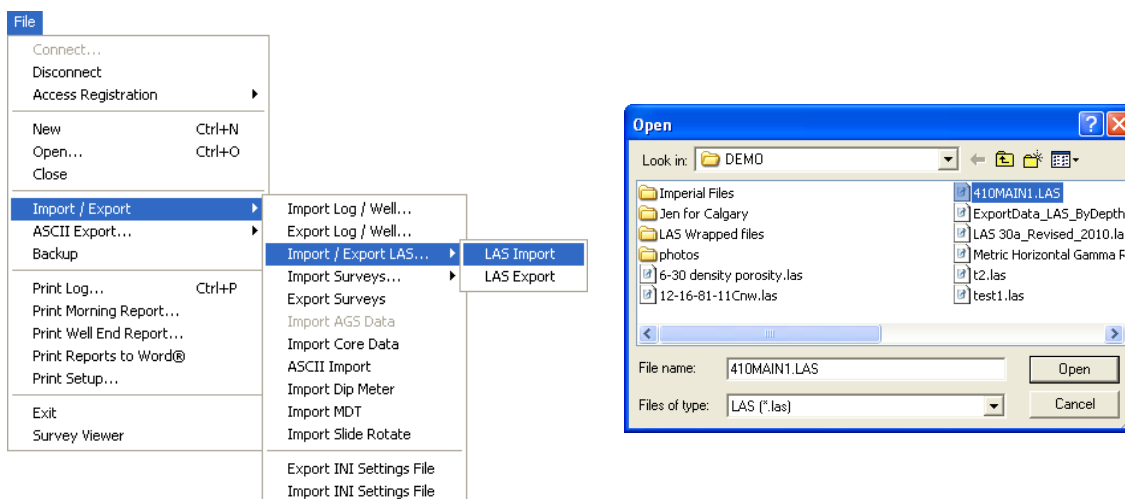
6. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
7. **Click** on the  **button**. You will then be prompted with a system message after the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



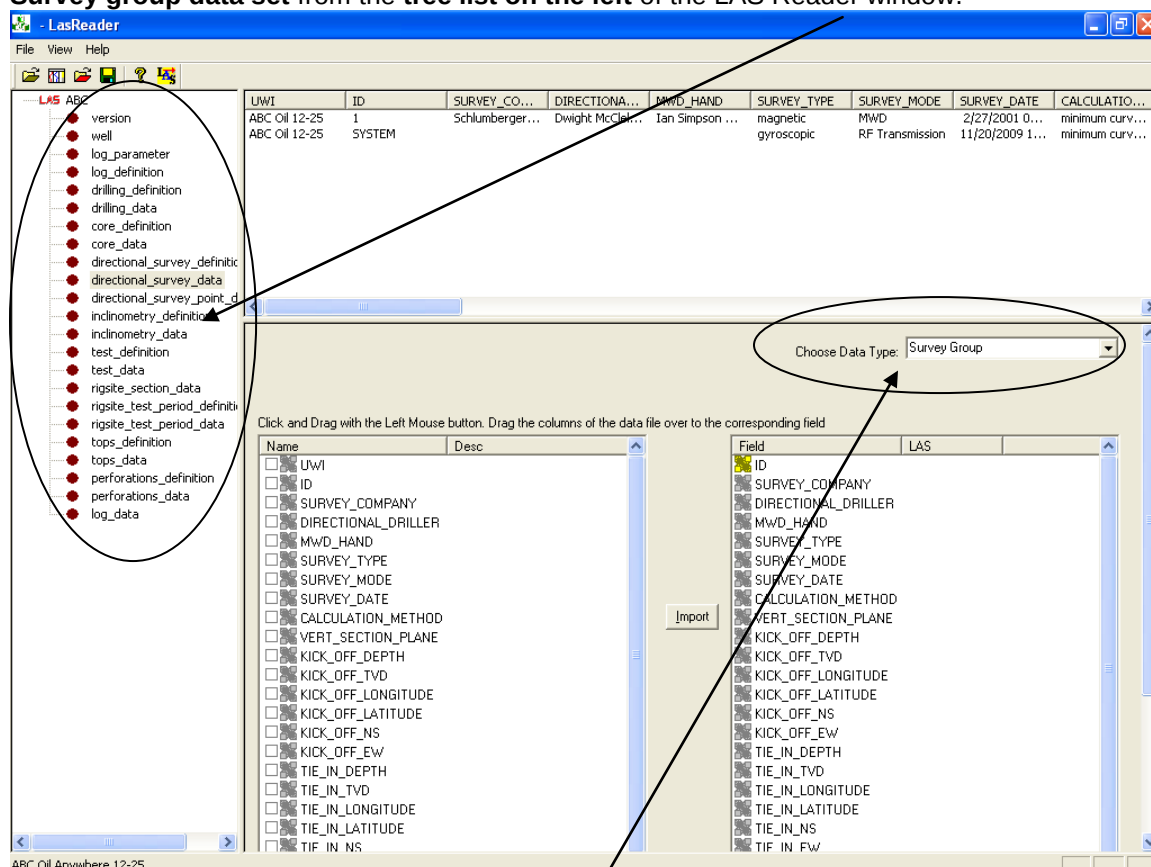
8. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File menu** and **select the Exit** option to close the LAS Reader Window.

Importing / Mapping of LAS Inclination (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.



- 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 **Open** 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.

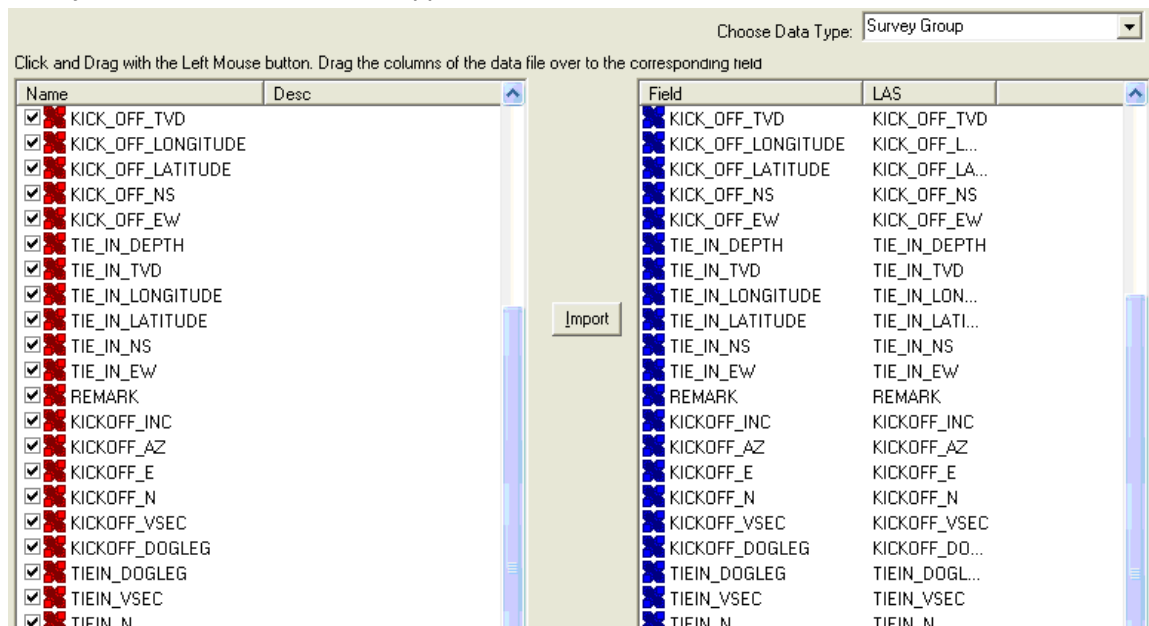


- Select **Survey Group** from the **Choose Data type** drop box.
- On the lower left side of the window **click and drag** the **Survey group data** you wish to import to the **survey group data type field** on the lower right side and release it when the data field becomes

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

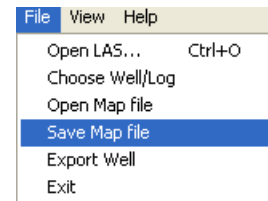
N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

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.



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.



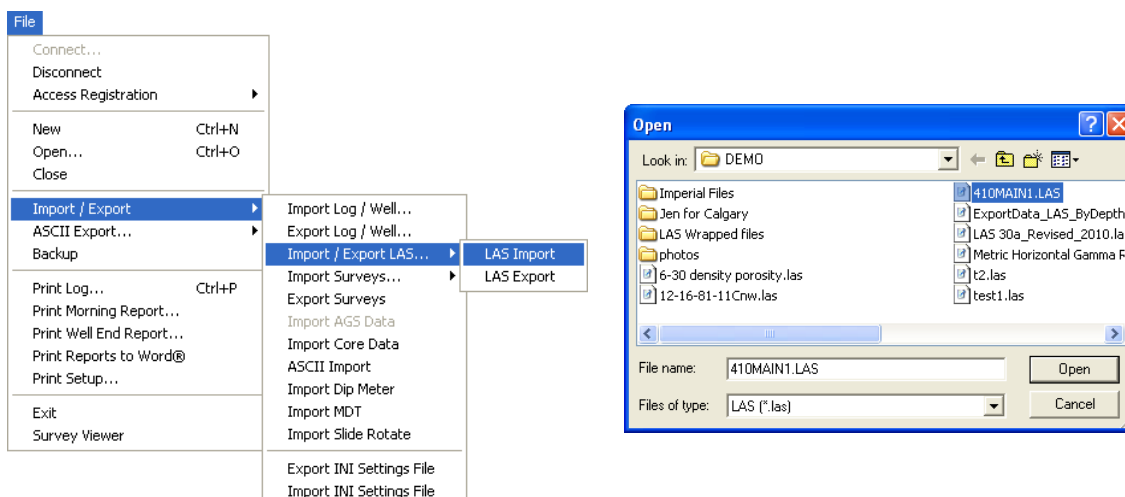
7. **Click** on the  button. You will then be prompted with a system message after the import has finished.



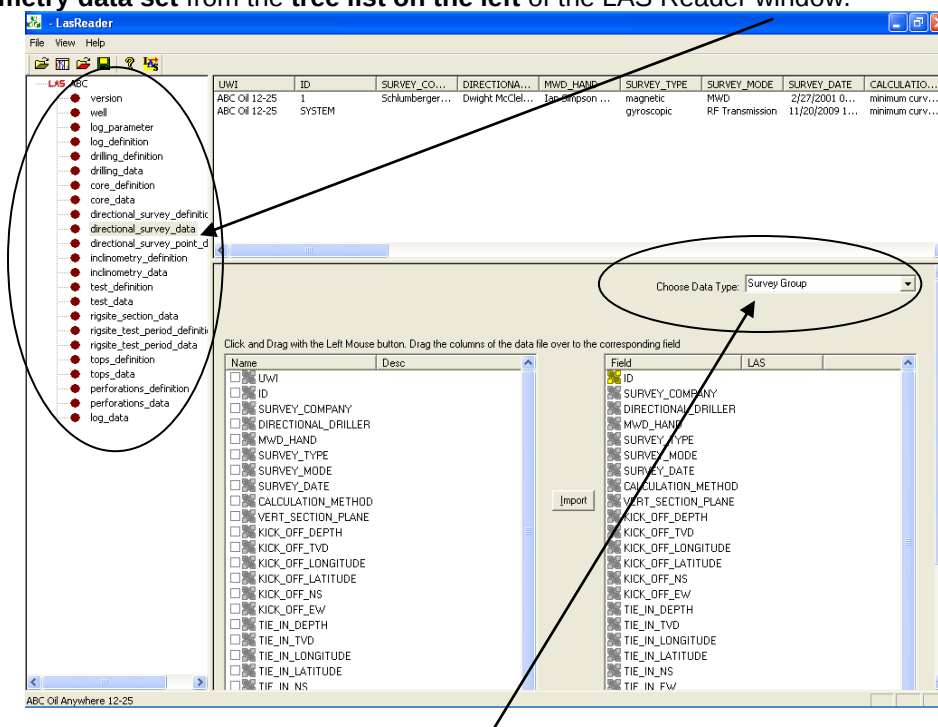
8. **Acknowledge** the Finished Import message. **Click** on the  button and then **click** on the  button to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

Import LAS Survey Group data with a Mapped file.

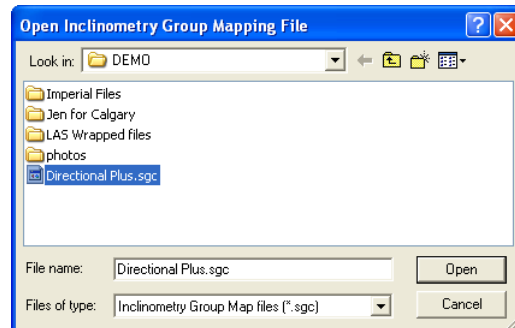
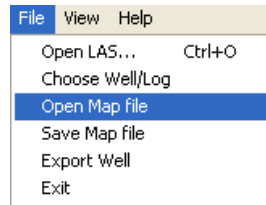
1. With your well open in Power*Log / Curve or Core **Click** on the **File** pull down menu selection and **click** on **Import / Export** and then **click** on **Import / Export LAS** and then **select LAS Import** from the pop out-menu or simply **click** on the  LAS button, on the **Toolbar**, to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

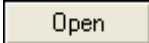


- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar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



- Select **Surveys Group** from the **Choose Data type** drop box.
- 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.



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

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

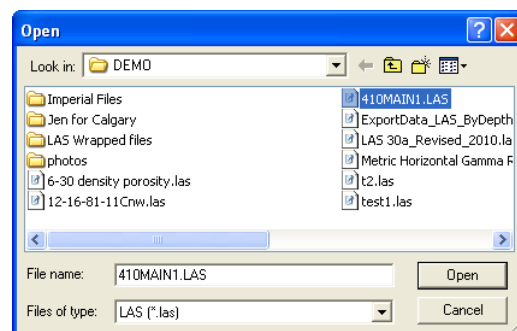
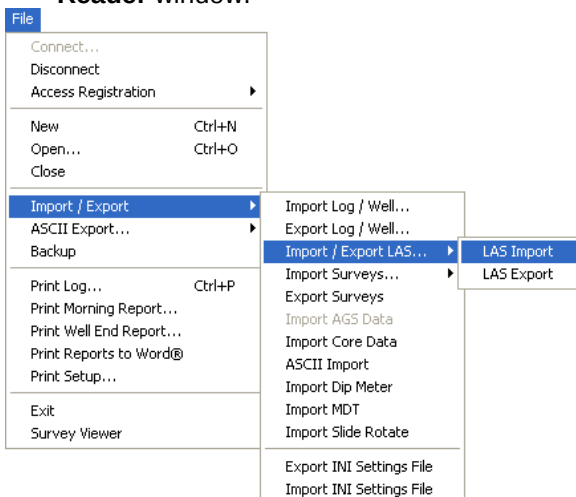
6. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
7. **Click** on the  **button**. You will then be prompted with a system message after the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



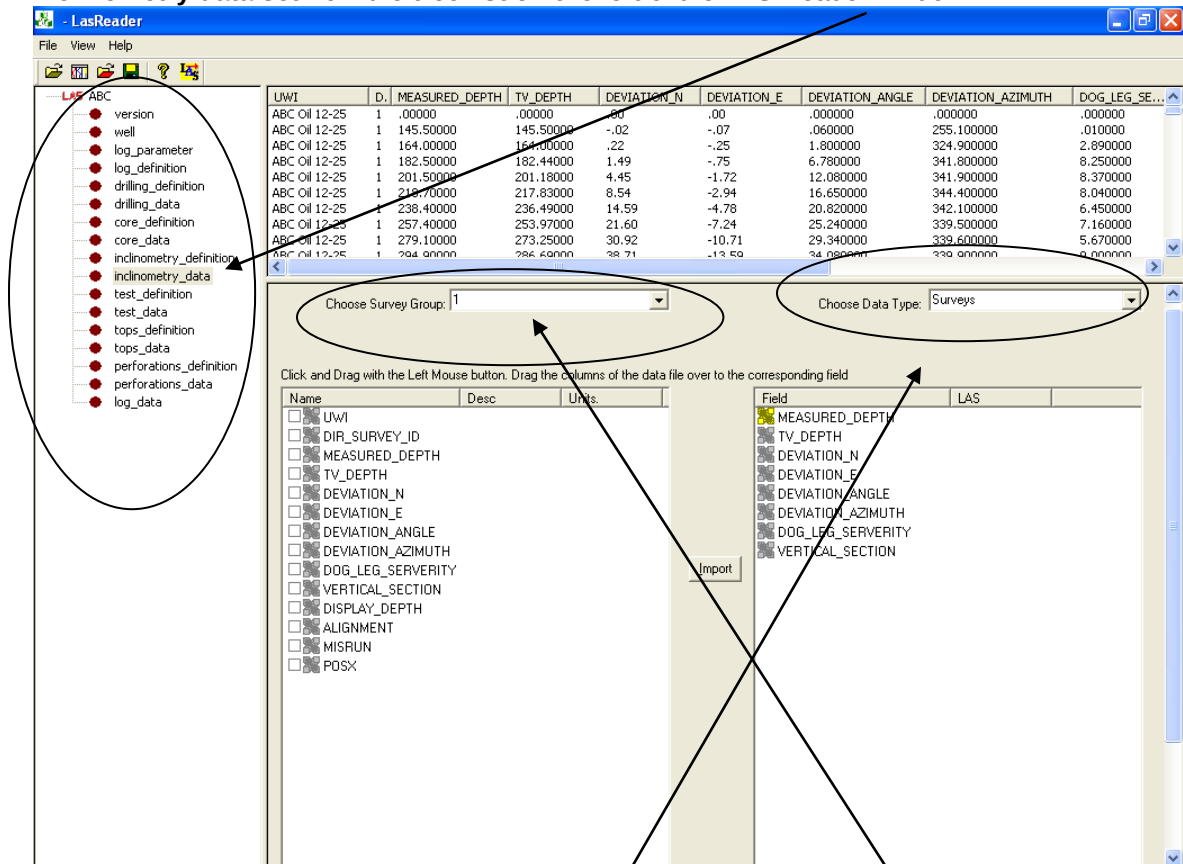
8. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

Importing / Mapping of LAS Inclinerometry (survey) 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.



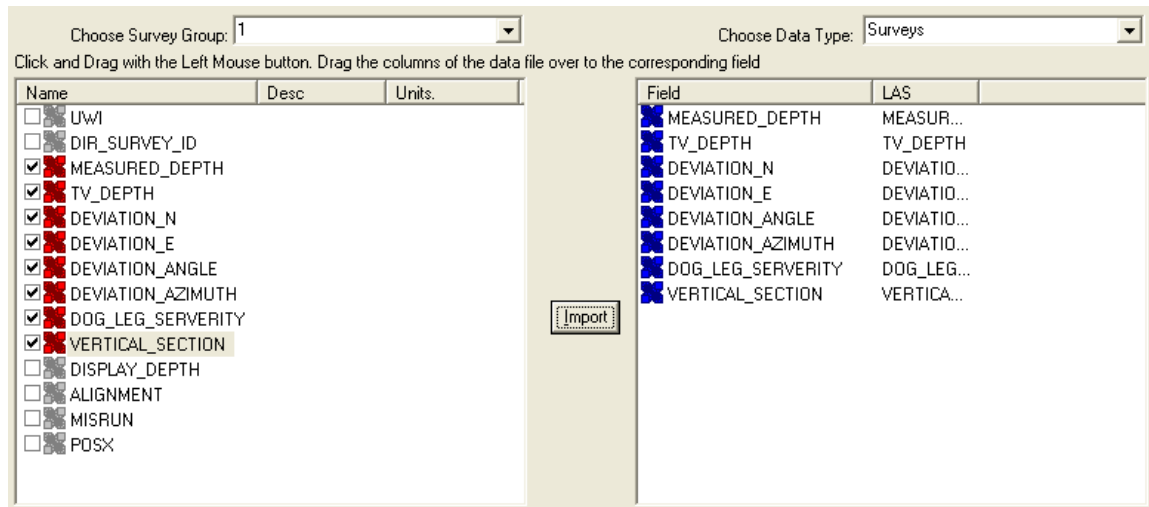
- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar 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.
- Select the **survey group** you wish to import the data into from the **Choose Survey group** drop box
- 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  and must be mapped for the record to exist in the database.

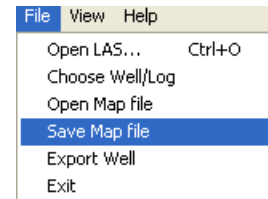
N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

- 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.



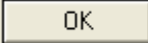
7. The user can save this mapping procedure at this time by **clicking** on

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 Inclinator data (survey data) again.



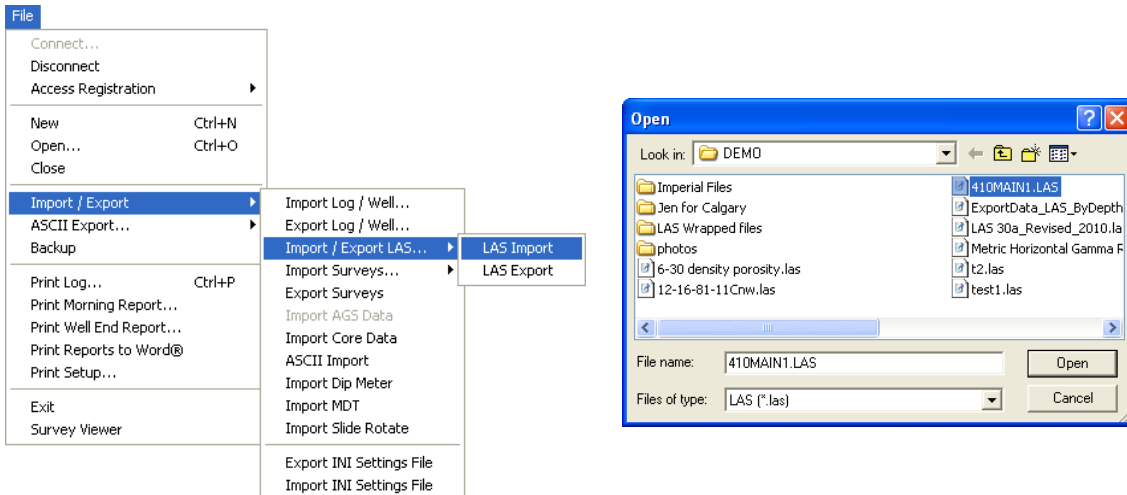
8. **Click** on the  **button**. You will then be prompted with a system message after the import has finished.



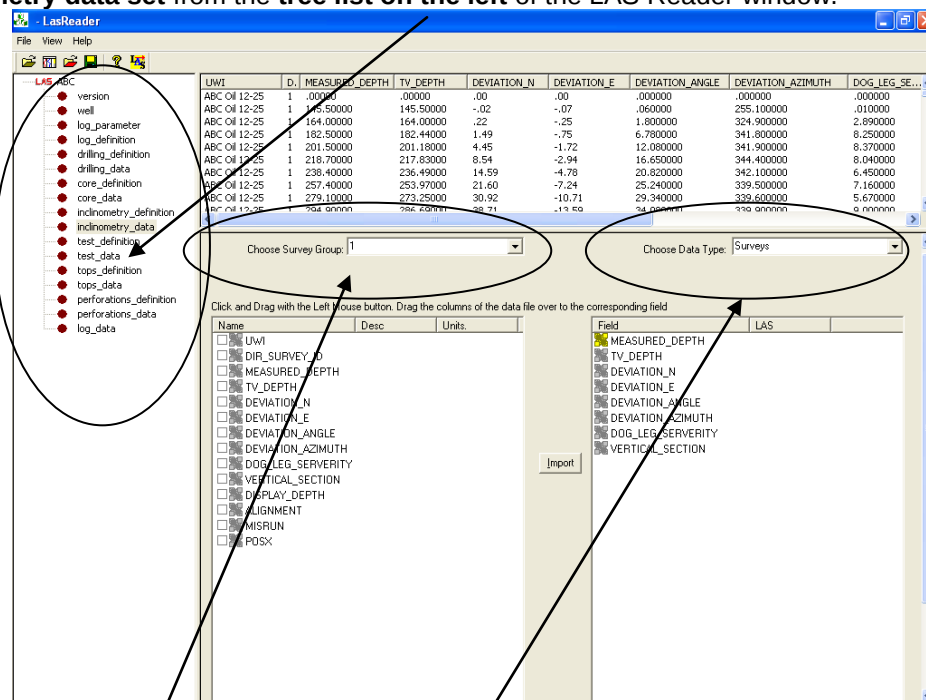
9. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File menu** and **select the Exit** option to close the LAS Reader Window.

Import LAS Inclinator 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 **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.

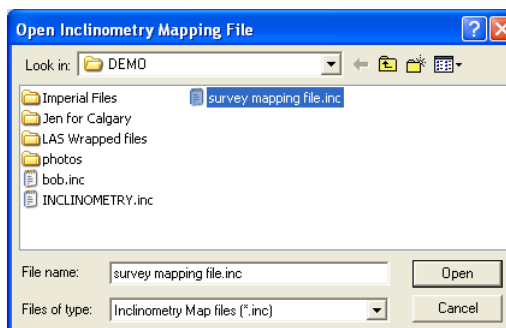
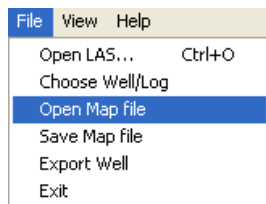


- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar 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.
- Select the **survey group** you wish to import the data into from the **Choose Survey group** drop box
- 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.



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

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

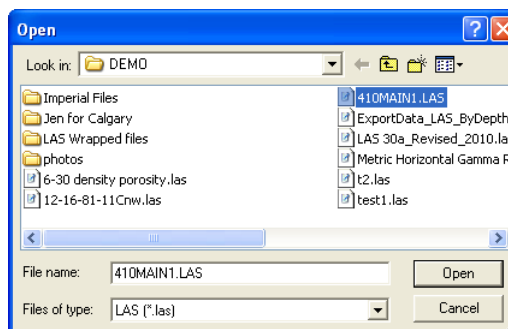
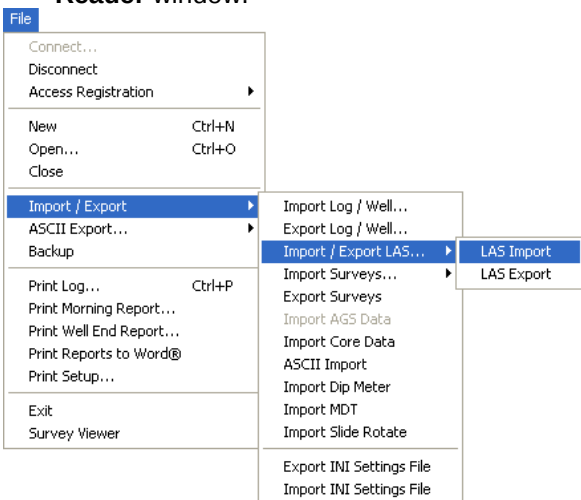
7. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
8. **Click** on the  **button**. You will then be prompted with a system message after the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



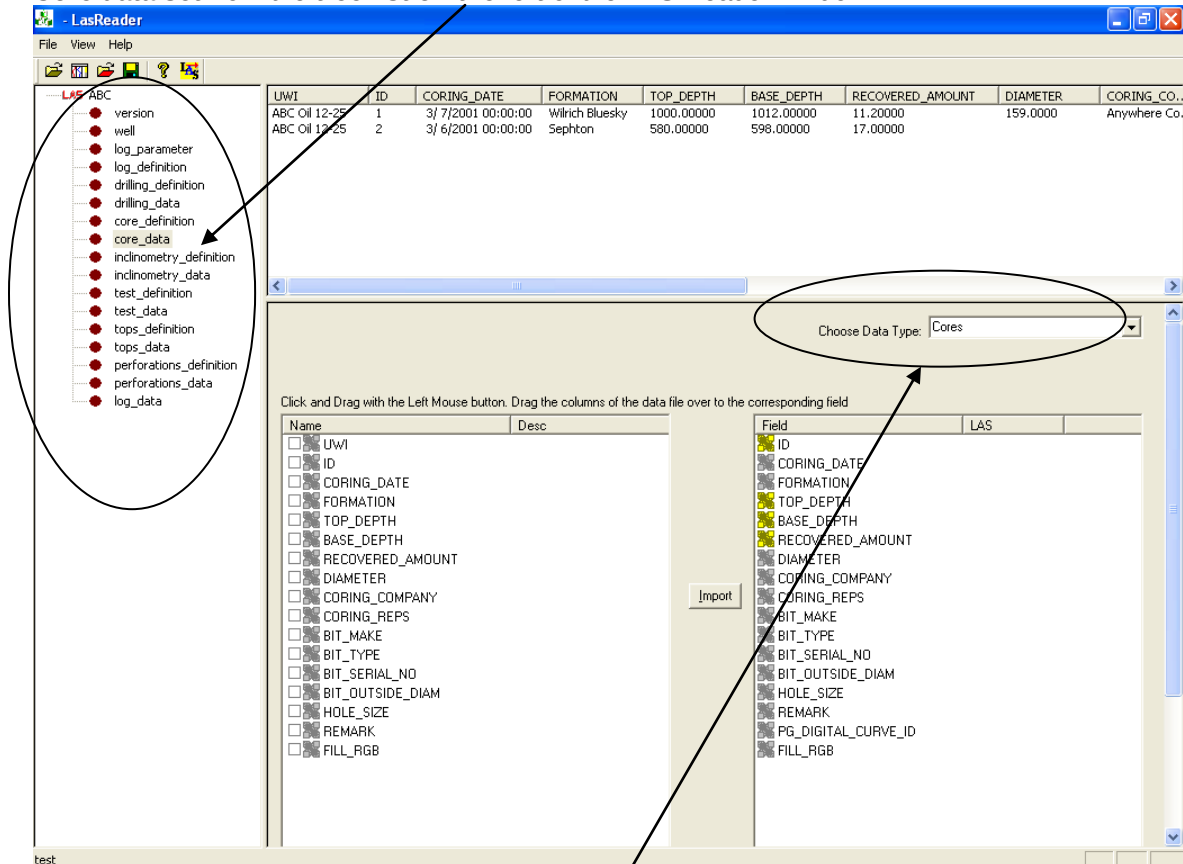
9. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File menu** and **select the Exit** option to close the LAS Reader Window.

Importing / Mapping of 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.



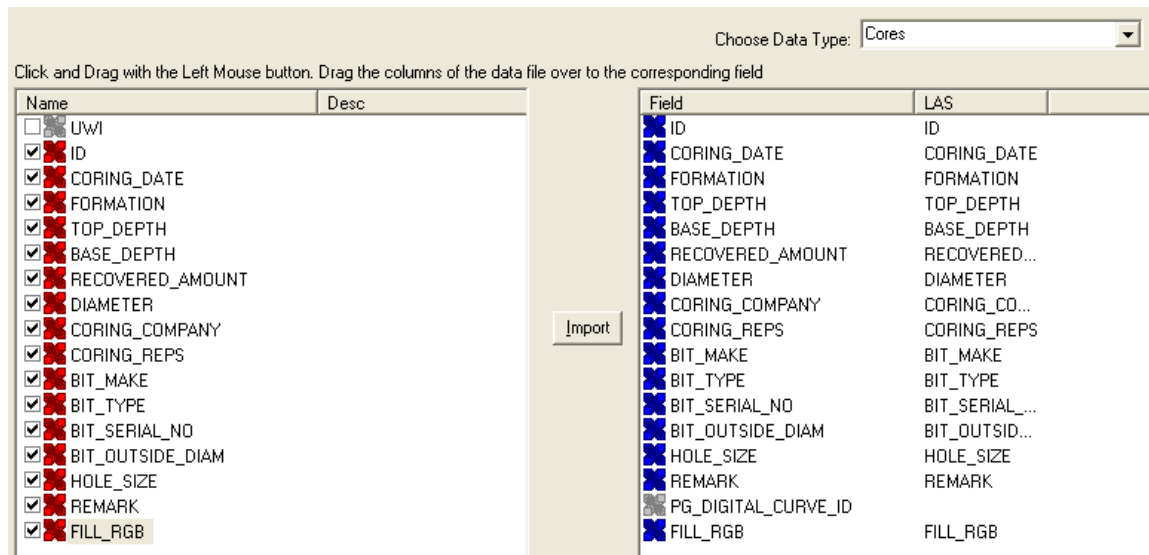
- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar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



- Select **Cores** from the **Choose Data type** drop box.
- 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.

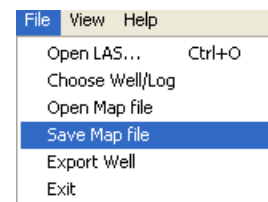
N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

- 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.



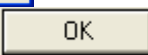
6. The user can save this mapping procedure at this time by **clicking on**

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.



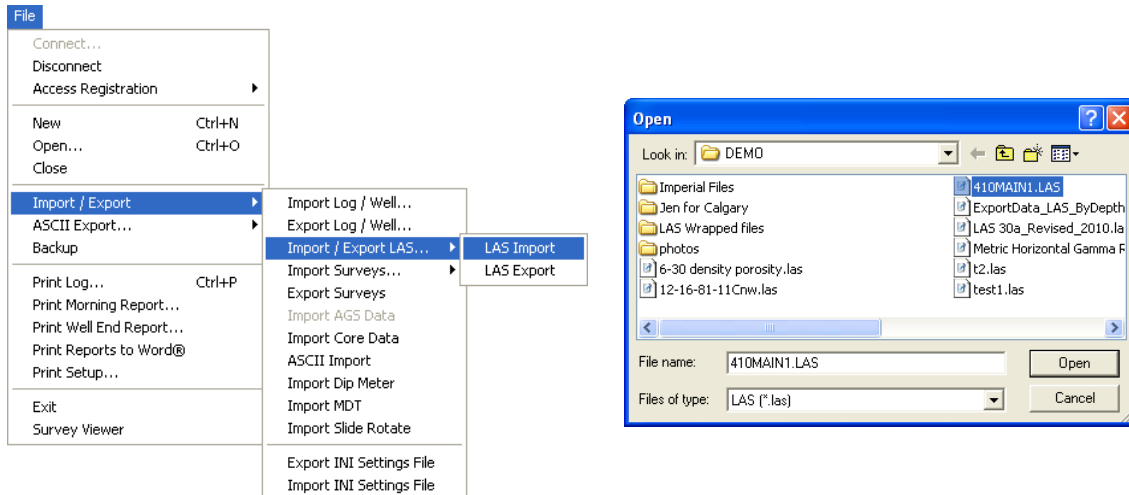
7. **Click** on the  **button**. You will then be prompted with a system message after the import has finished.



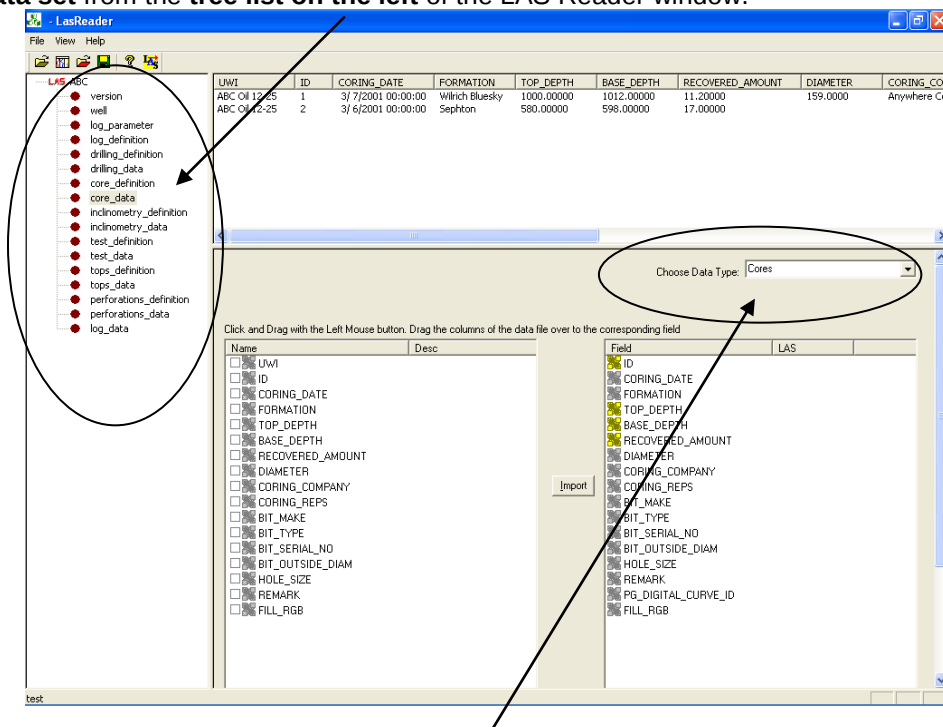
8. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

Import LAS Core data with a Mapped file.

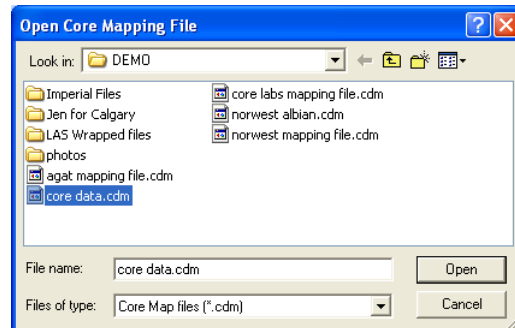
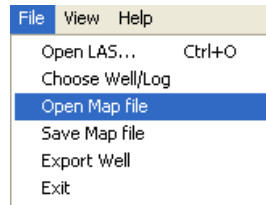
1. With your well open in Power*Log / Curve or Core **Click** on the **File** pull down menu selection and **click** on **Import / Export** and then **click** on **Import / Export LAS** and then **select LAS Import** from the pop out-menu or simply **click** on the  **LAS button**, on the **Toolbar**,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

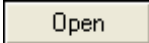


- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar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



- Select **Cores** from the **Choose Data type** drop box.
- 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.



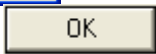
5. **Select** the mapping file with the *.cdm saved from previous imports of similar data to the database and **click** on the  **button**.

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.

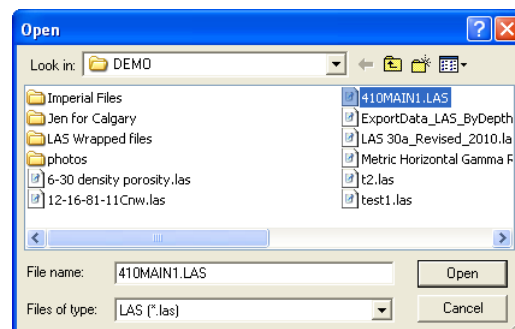
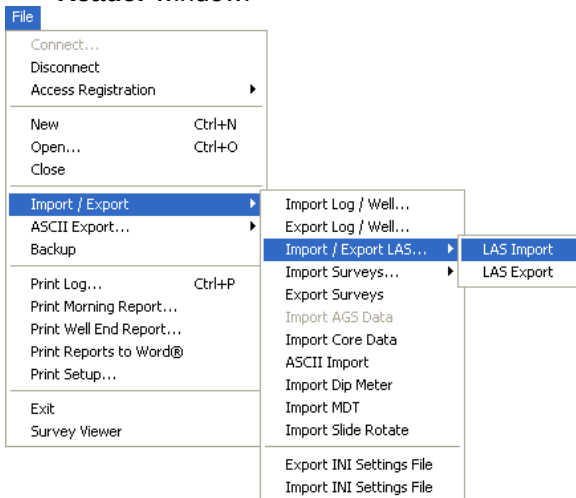
7. **Click** on the  **button**. You will then be prompted with a system message after the import has finished.



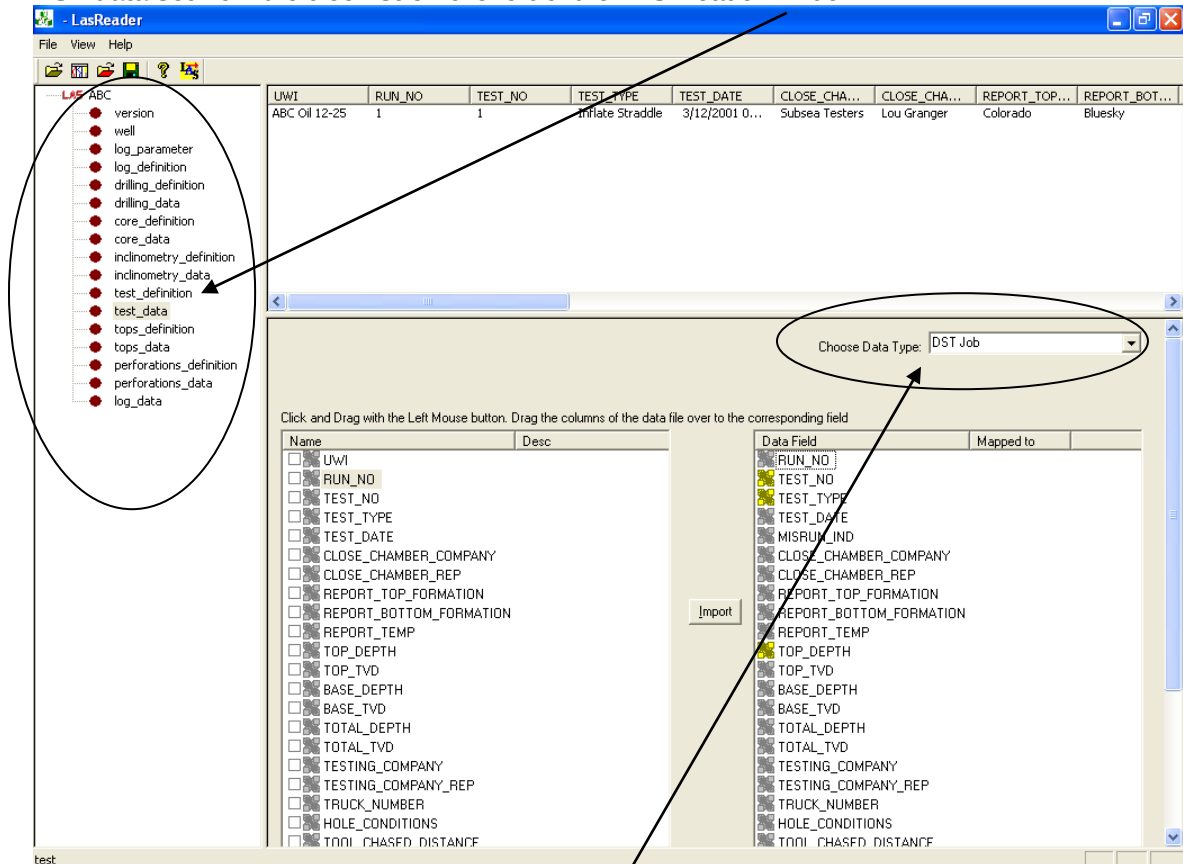
8. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

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.



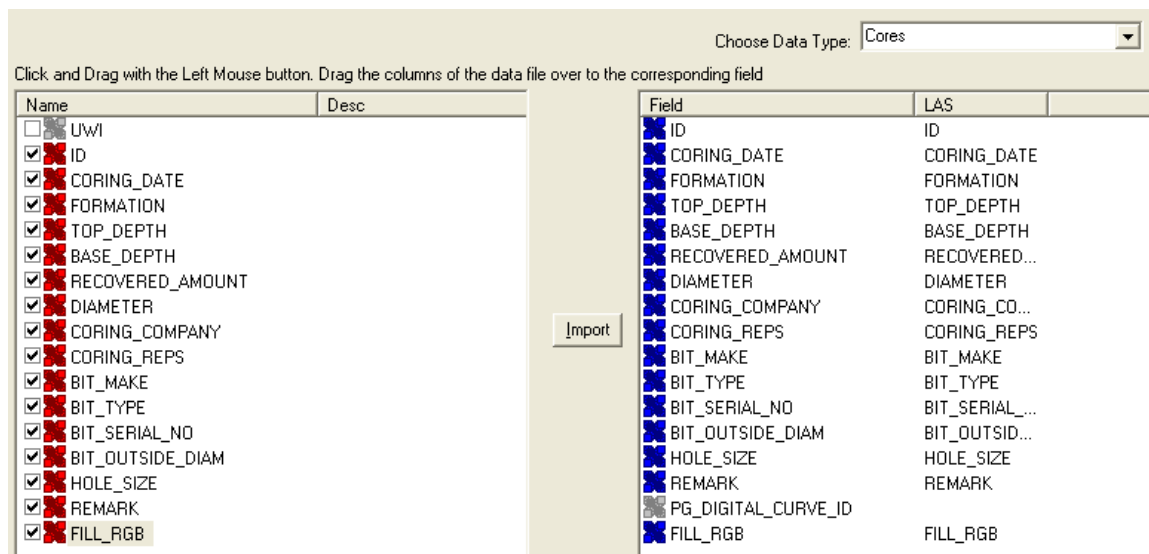
- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar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



- Select **DST Job** from the **Choose Data type** drop box.
- 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  and must be mapped for the record to exist in the database.

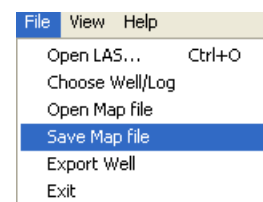
N.B. The user can remove the mapping by right clicking on the data field and selecting remove mapping.

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

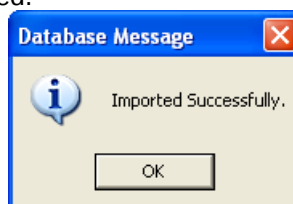


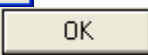
6. The user can save this mapping procedure at this time by **clicking on**

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 DST data again.



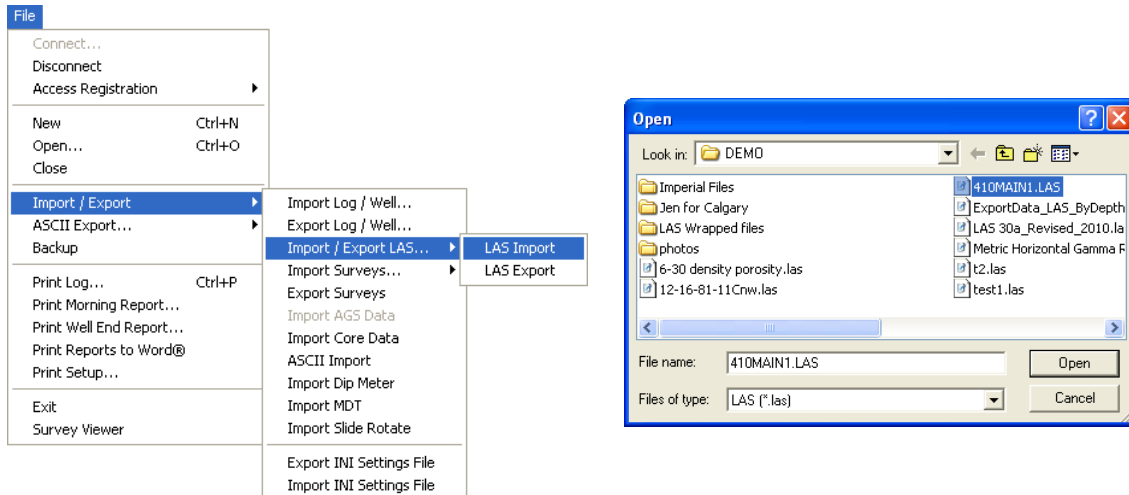
7. **Click** on the  **button**. You will then be prompted with a system message after the import has finished.



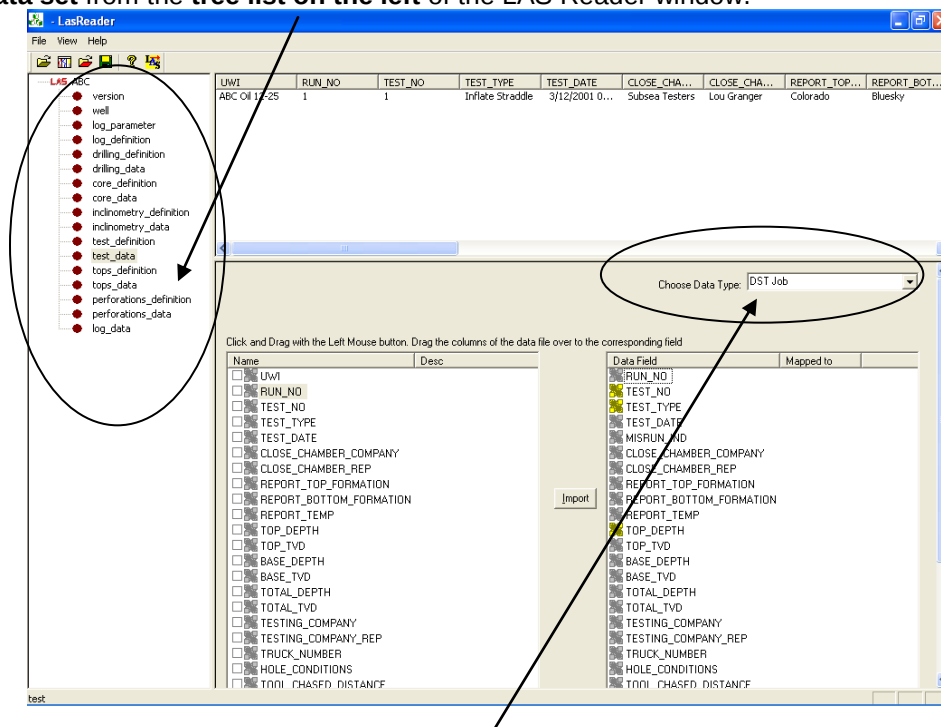
8. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

Import LAS Drill Stem Test data with a Mapped file.

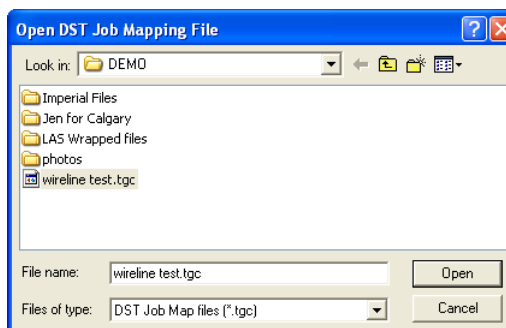
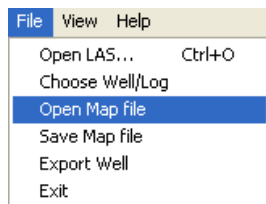
1. With your well open in Power*Log / Curve or Core **Click** on the **File** pull down menu selection and **click** on **Import / Export** and then **click** on **Import / Export LAS** and then **select LAS Import** from the pop out-menu or simply **click** on the  **LAS button**, on the **Toolbar**,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



- 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 **Open** 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.



- Select **DST Job** from the **Choose Data type** drop box.
- 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.



5. **Select** the mapping file with the *.tgc 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.

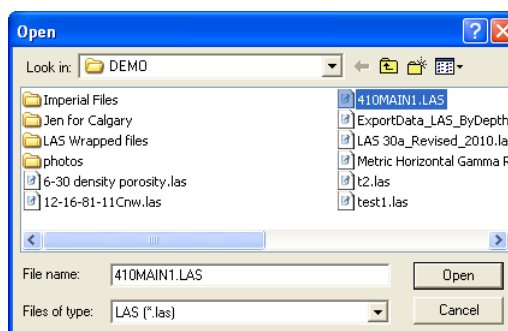
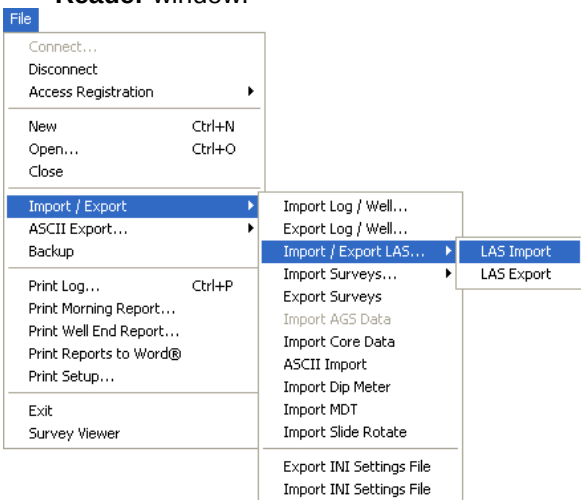
7. **Click** on the **Import** button. You will then be prompted with a system message after the import has finished.



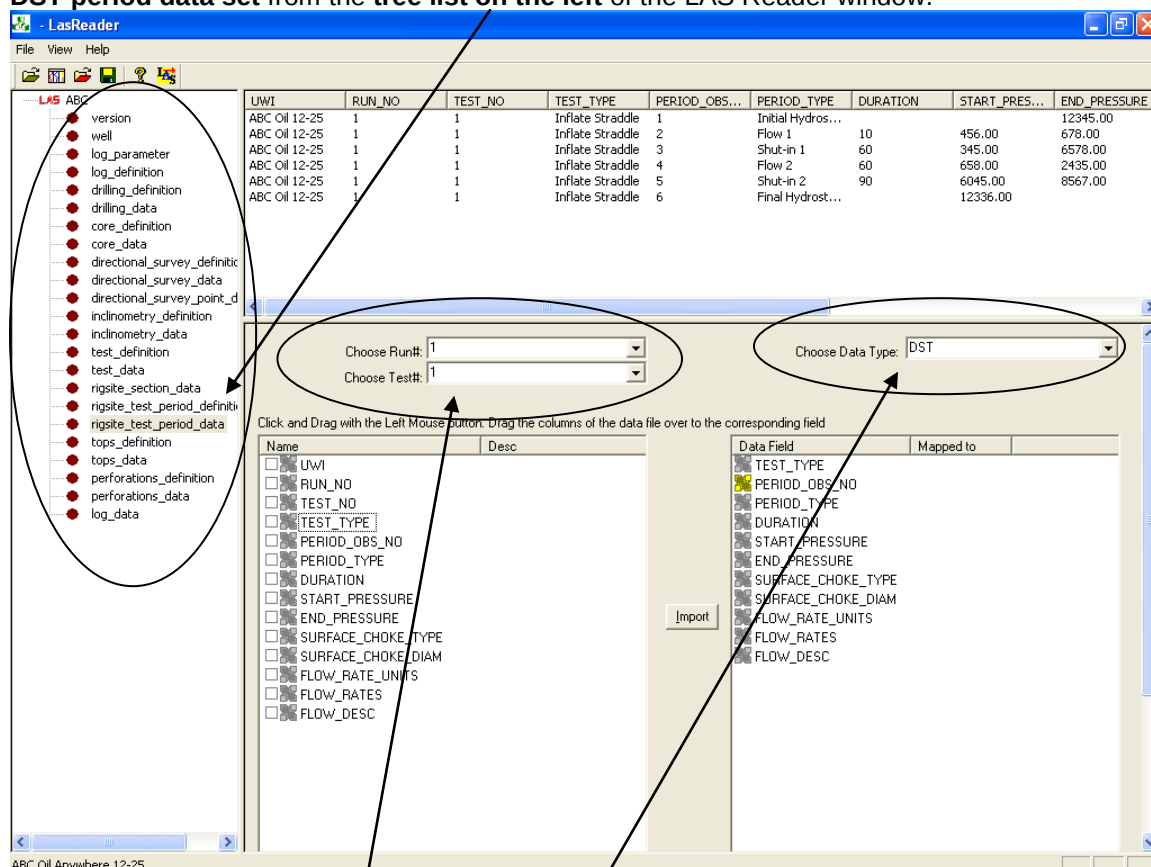
8. **Acknowledge** the Finished Import message. **Click** on the **OK** button and then **click** on the **X** button to exit or **click** on the **File menu** and **select the Exit** option to close the LAS Reader Window.

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.



- 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 **Open** 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.



- Select **DST** from the **Choose Data type** drop box.
- 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.
- 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  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 DST data until all have been mapped.

Choose Run#: 1 Choose Data Type: DST

Choose Test#: 1

Click and Drag with the Left Mouse button. Drag the columns of the data file over to the corresponding field

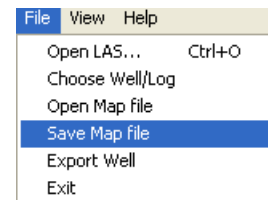
Name	Desc
☐ UWI	
☐ RUN_NO	
☐ TEST_NO	
☒ TEST_TYPE	
☒ PERIOD_OBS_NO	
☒ PERIOD_TYPE	
☒ DURATION	
☒ START_PRESSURE	
☒ END_PRESSURE	
☒ SURFACE_CHOKE_TYPE	
☒ SURFACE_CHOKE_DIAM	
☒ FLOW_RATE_UNITS	
☒ FLOW_RATES	
☒ FLOW_DESC	

Import

Data Field	Mapped to
☒ TEST_TYPE	TEST_TYPE
☒ PERIOD_OBS_NO	PERIOD_OBS...
☒ PERIOD_TYPE	PERIOD_TYPE
☒ DURATION	DURATION
☒ START_PRESSURE	START_PRE...
☒ END_PRESSURE	END_PRESS...
☒ SURFACE_CHOKE_TYPE	SURFACE_C...
☒ SURFACE_CHOKE_DIAM	SURFACE_C...
☒ FLOW_RATE_UNITS	FLOW_RATE...
☒ FLOW_RATES	FLOW_RATES
☒ FLOW_DESC	FLOW_DESC

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 DST data again.



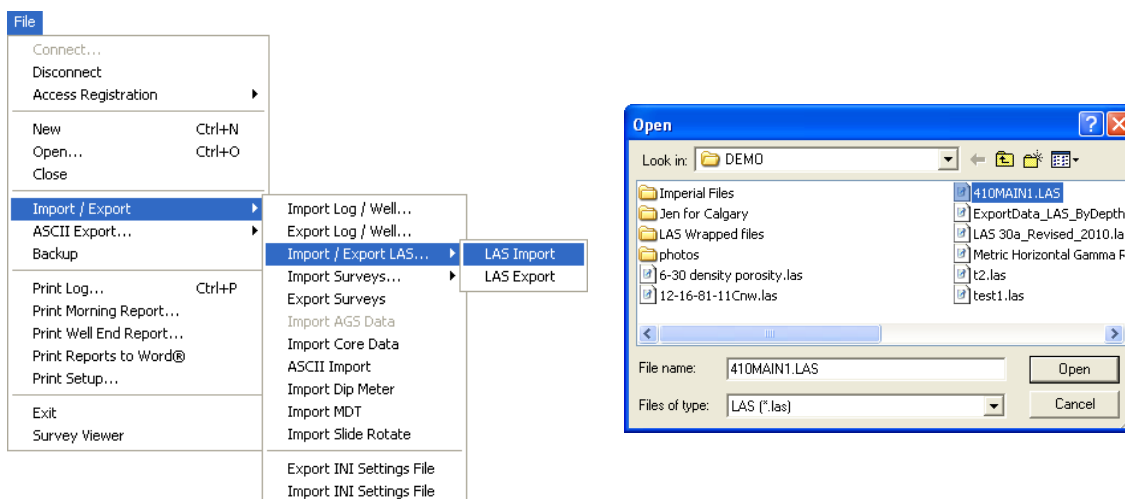
8. **Click** on the  **button**. You will then be prompted with a system message after the import has finished.



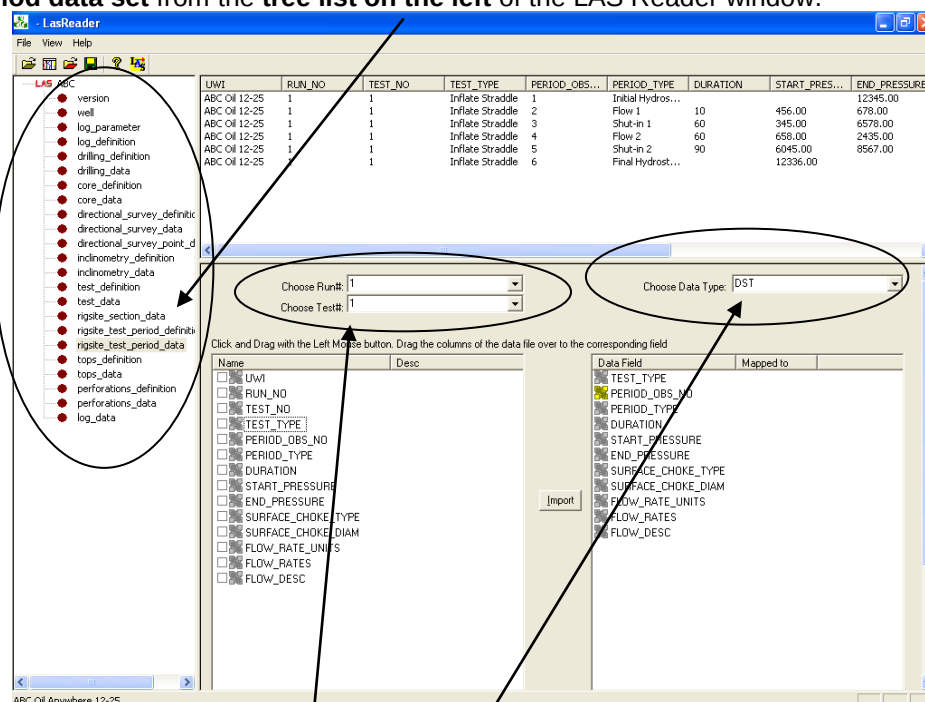
9. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

Import LAS Drill Stem Test period data with a Mapped file.

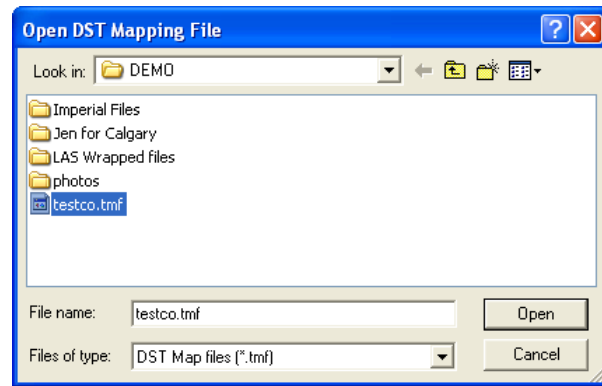
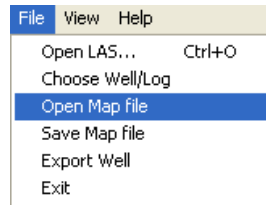
1. With your well open in Power*Log / Curve or Core **Click** on the **File** pull down menu selection and **click** on **Import / Export** and then **click** on **Import / Export LAS** and then **select LAS Import** from the pop out-menu or simply **click** on the  **LAS button**, on the **Toolbar**,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



- 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 **Open** 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.



- Select **DST** from the **Choose Data type** drop box.
- 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.
- 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.

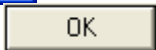


6. **Select** the mapping file with the *.tmf saved from previous imports of similar data to the database and **click** on the  **button**.

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

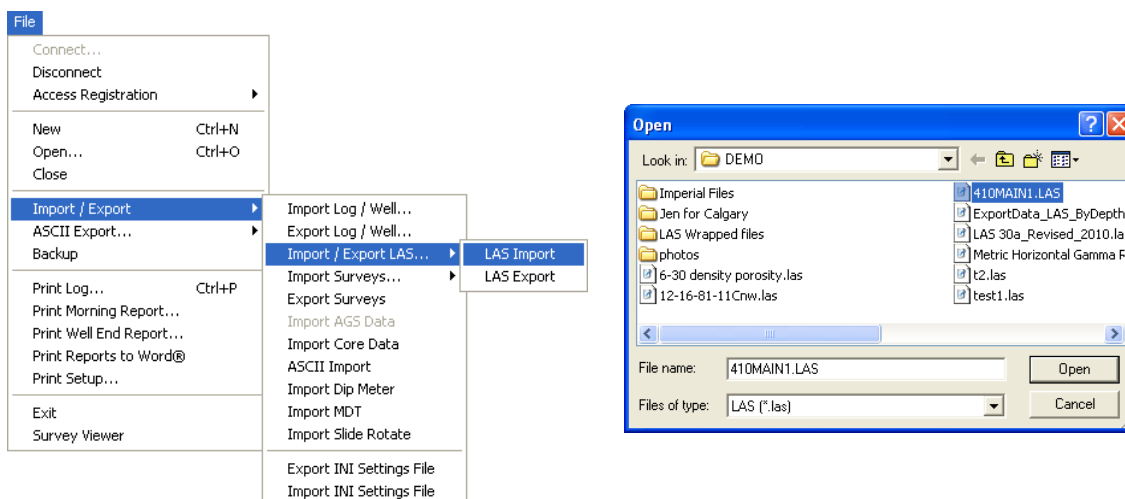
7. The user can map more data on the left side of the window **by clicking and dragging** the **data** you wish to import to the **data field** on the right side and release it when the layer becomes highlighted.
8. **Click** on the  **button**. You will then be prompted with a system message after the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



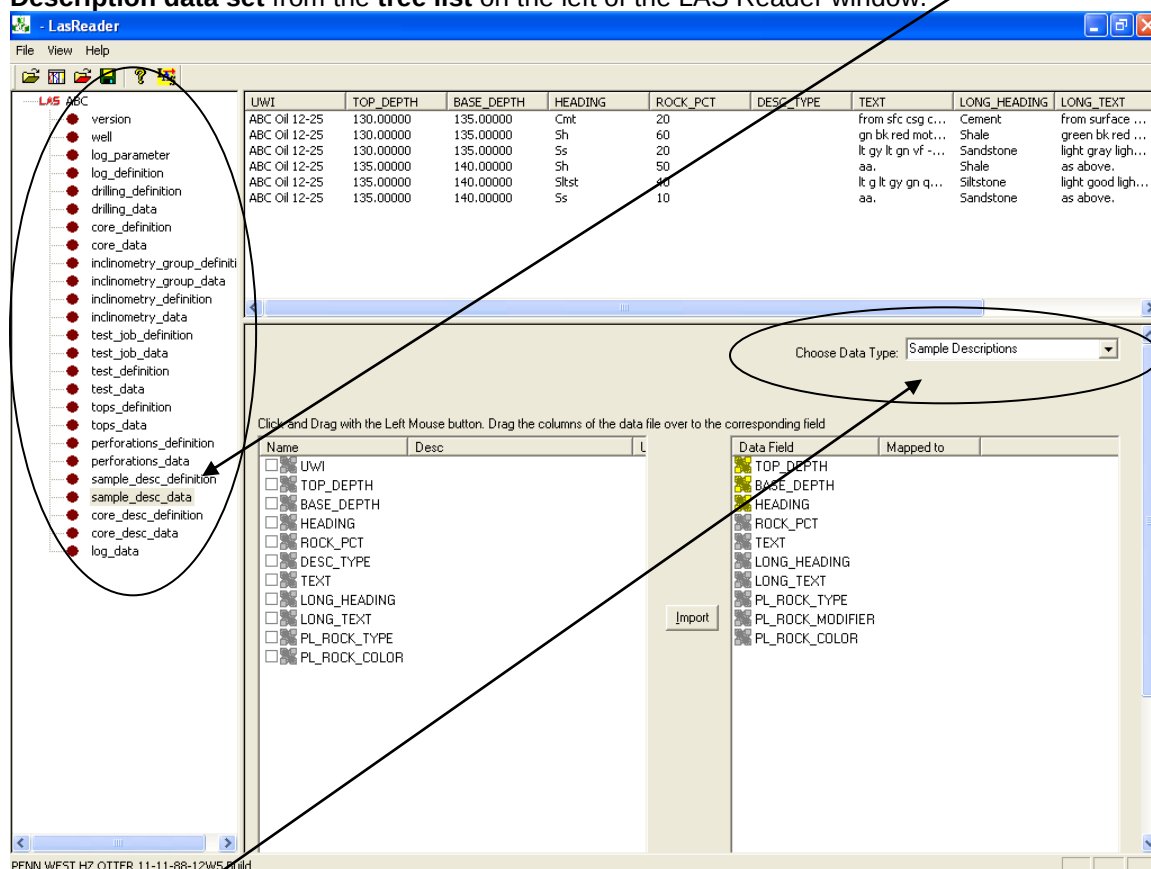
9. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

Importing / Mapping of LAS 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 simply **click** on the  **LAS** button, on the **Toolbar**, to activate the **LAS Reader** window.



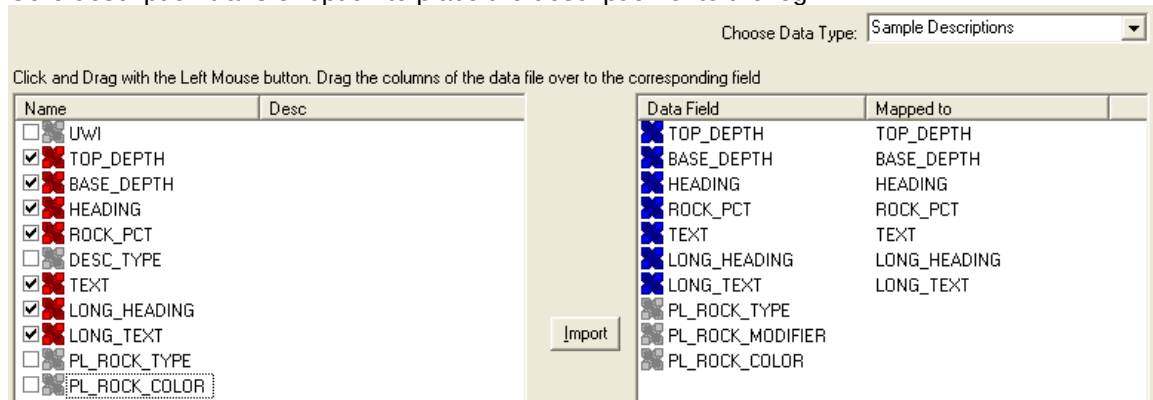
- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar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



- Select **Sample Description** from the **Choose Data type** drop box.
- 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.

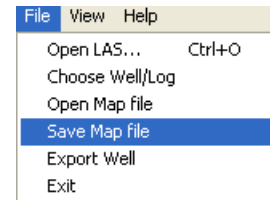
N.B. The user can **Right click** on the **Data Field** to remove the mapping.

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.

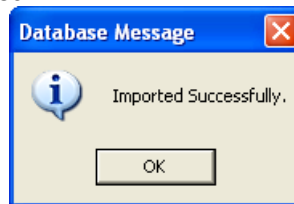


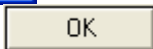
6. The user can save this mapping procedure at this time by **clicking on**

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 Curve data again.



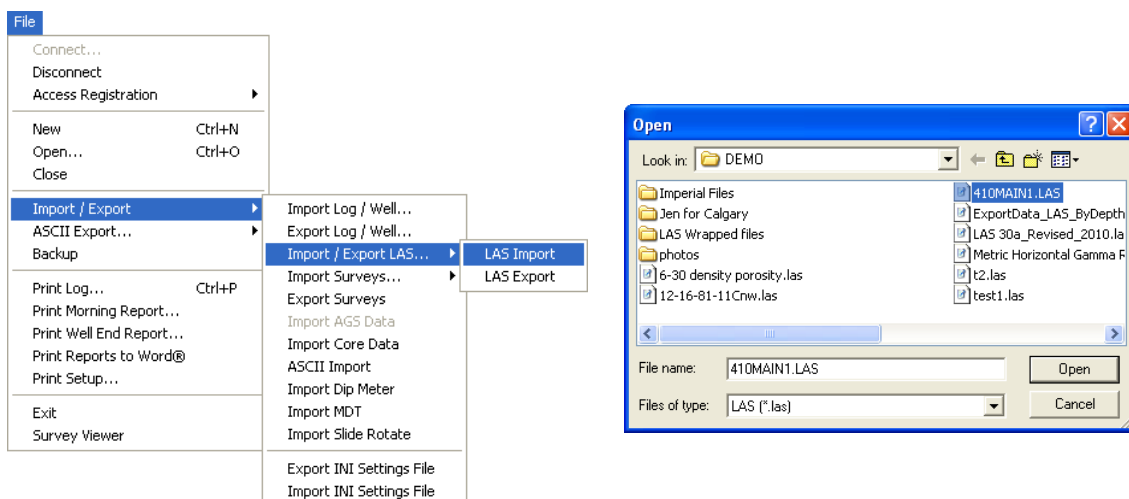
7. **Click on the**  **button.** You will then be prompted with a system message after the import has finished.



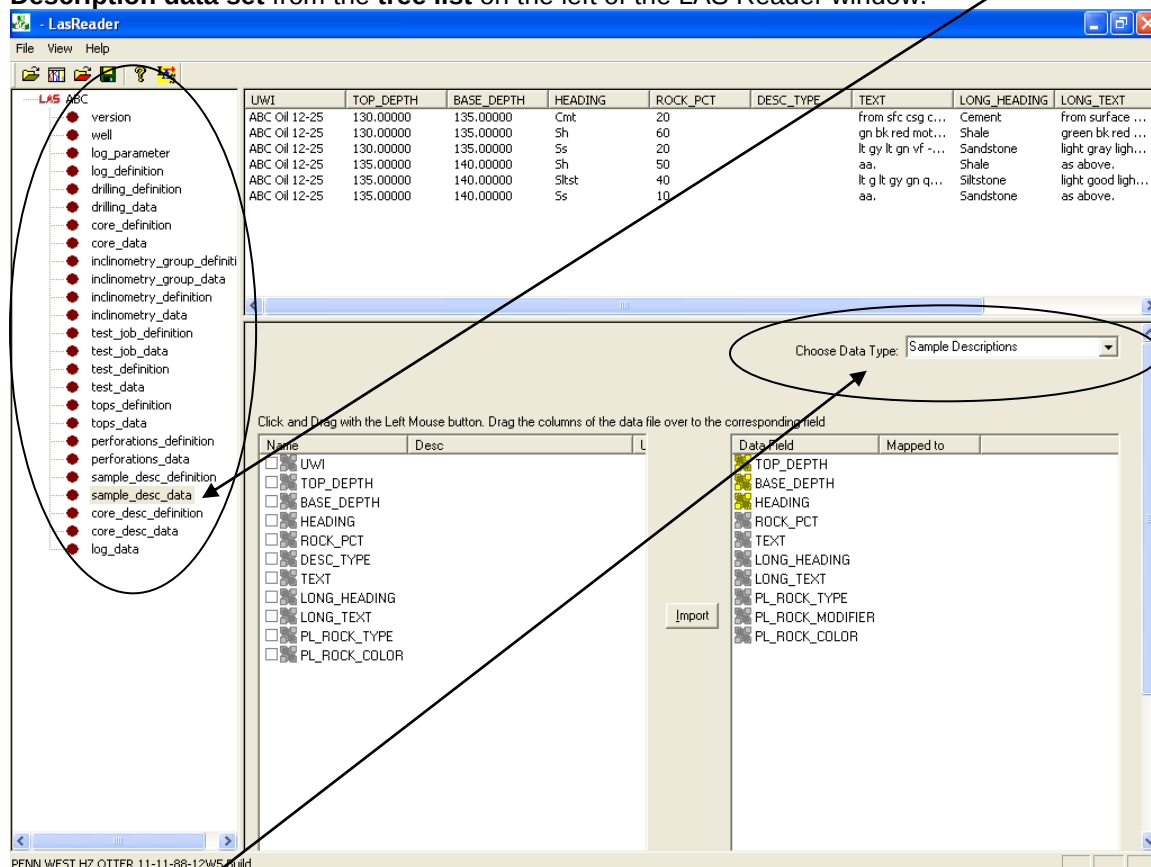
8. **Acknowledge** the Finished Import message. **Click on the**  **button** and then **click on the**  **button** to exit or **click on the File menu and select the Exit option** to close the LAS Reader Window.

Import LAS Sample Description data from 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.

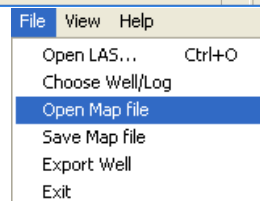


- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar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



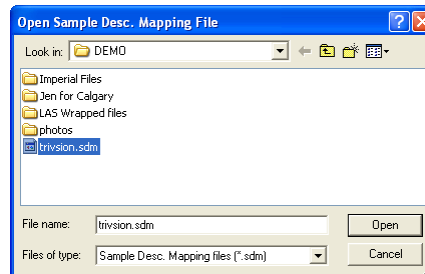
- Select **Sample Description** from the **Choose Data type** drop box.
- Select **Open Map file**, under the **File** menu selection if you would like to open a saved mapping file for a particular data set. Or, you

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.

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.

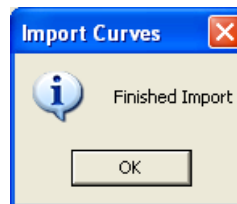


5. **Select** the mapping file with the ***.sdm** saved from previous imports of similar data and **click** on the  **button**.

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.

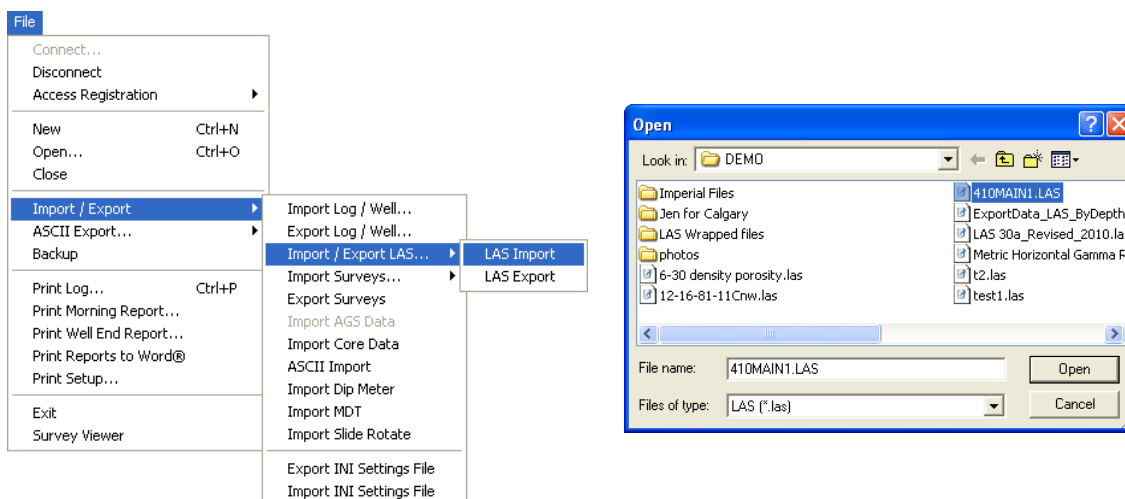
7. **Click** on the  **button**. You will then be prompted with a system message after the import has finished.



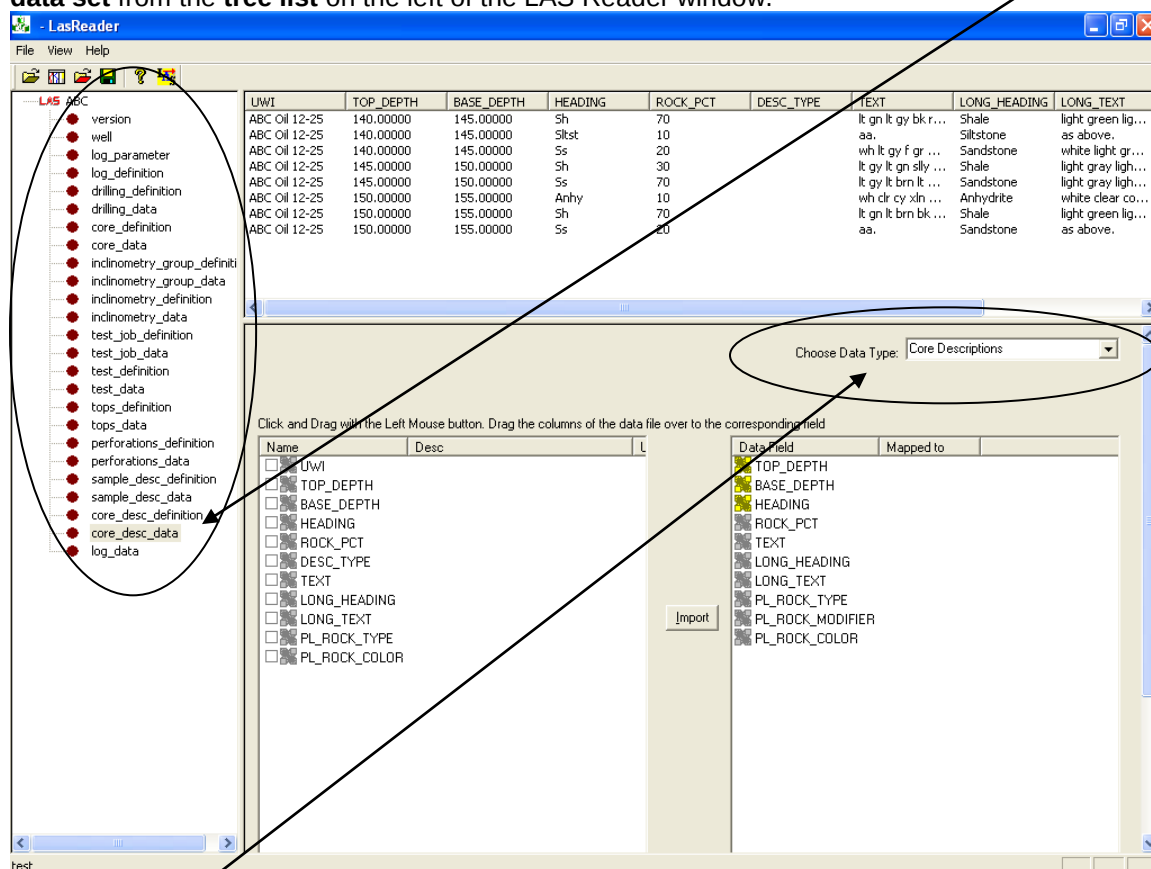
8. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File menu** and **select the Exit** option to close the LAS Reader Window.

Importing / Mapping of LAS 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 simply **click** on the  **LAS button**, on the **Toolbar**, to activate the **LAS Reader** window.



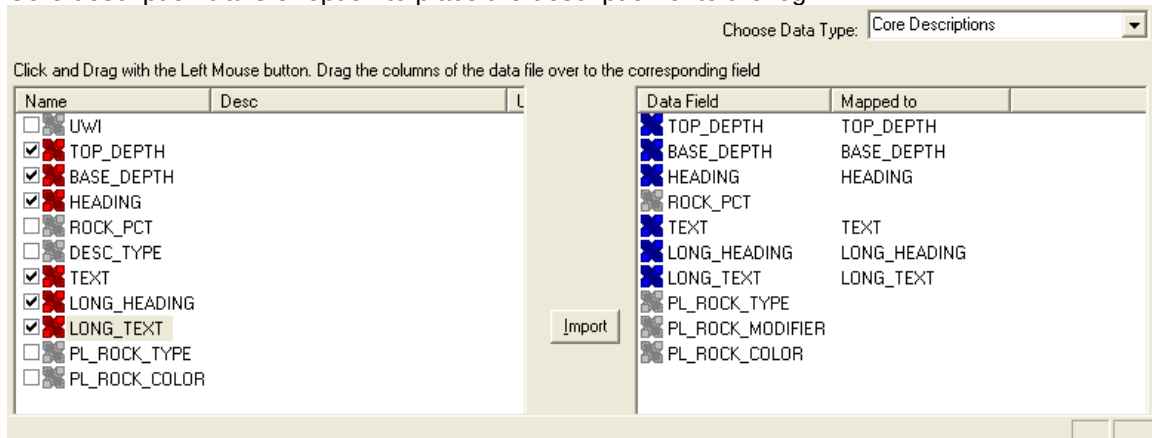
- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar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



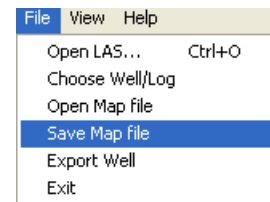
- Select **Core Description** from the **Choose Data type** drop box.
- On the lower left side of the window **click and drag** the **Core Description Data** in the LAS file you wish to import to the **core description table data field** on the lower right side and release it when the data field becomes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

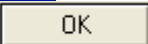


6. The user can save this mapping procedure at this time by **clicking on** the  **button** or **click** on the **File menu** and **Select the Save map file** option and giving this procedure a file name and folder to be used again at a later date when you would have to import similar LAS Curve data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



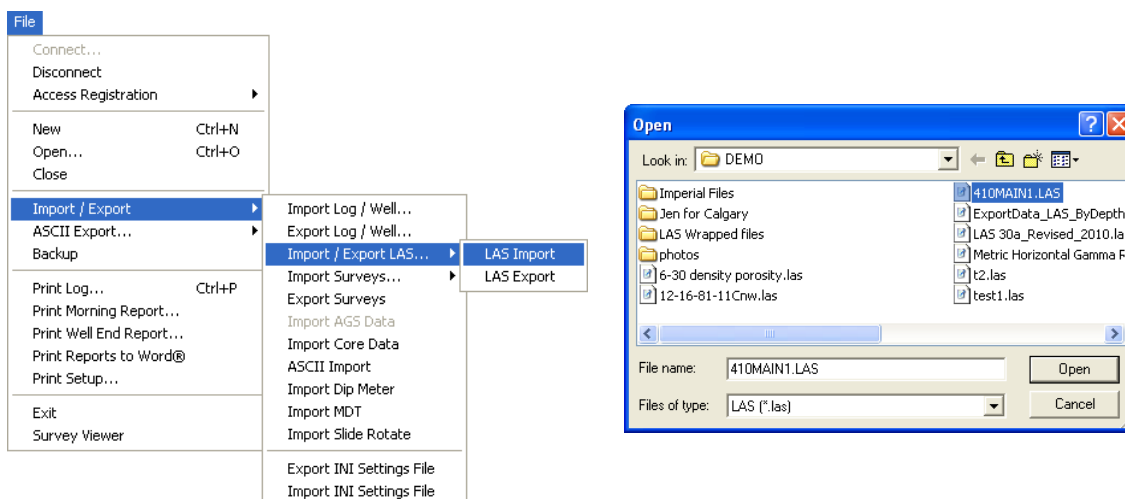
7. **Click** on the  **button**. You will then be prompted with a system message after the import has finished.



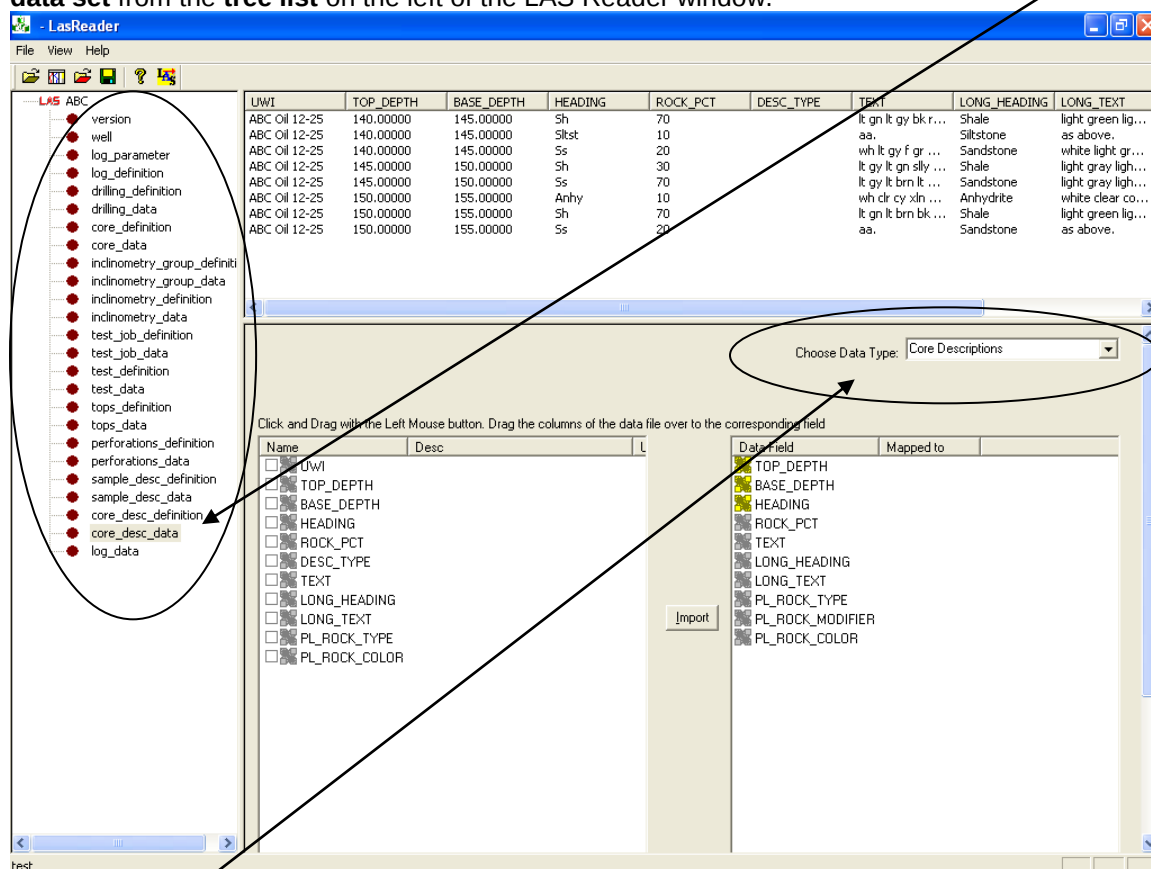
8. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File menu** and **select the Exit** option to close the LAS Reader Window.

Import LAS Core Description data from 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.

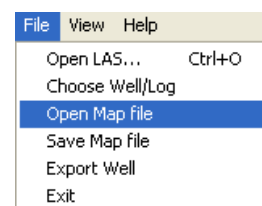


- This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. Find the file and directory and highlight the file by **click** on it **once** and then **click** on the **Open** button. If your log is open at the time you will see something similar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



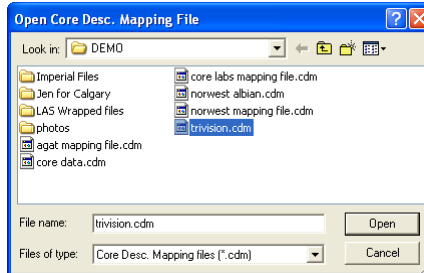
- Select **Core Description** from the **Choose Data type** drop box.
- Select **Open Map file**, under the **File** menu selection if you would like to open a saved mapping file for a particular data set. Or, you

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.

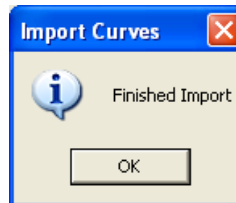
N.B. The file extensions are ***.cvm** for curve data, ***.ftm** for formation data, ***.sgc** for survey group data, ***.inc** for survey data, ***.cdm** for core data, ***.tgc** for DST job data, ***.tmf** for DST interval data ***.sdm** for sample descriptions and ***.cdm** for Core Description data.

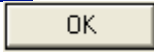


5. **Select** the mapping file with the ***.cdm** saved from previous imports of similar data and **click** on the  **button**.

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.



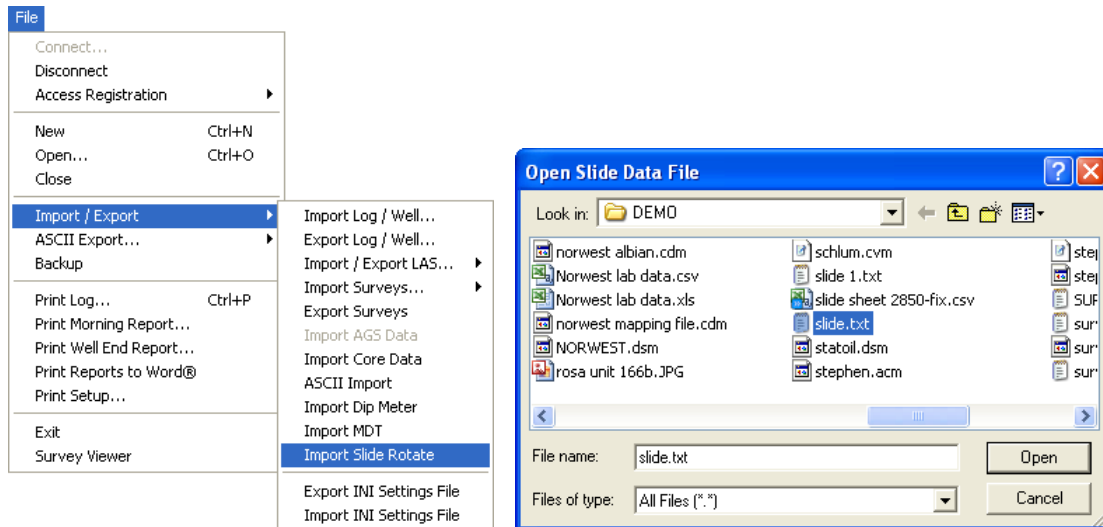
8. **Acknowledge** the Finished Import message. **Click** on the  **button** and then **click** on the  **button** to exit or **click** on the **File menu** and **select the Exit** option to close the LAS Reader Window.

Slide Data Import

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.

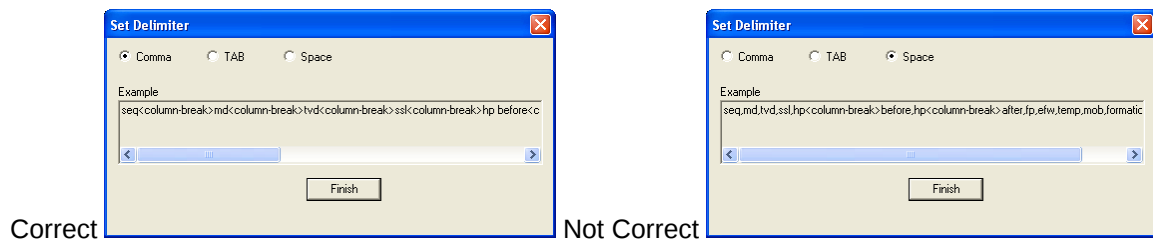
Importing Slide Data

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.

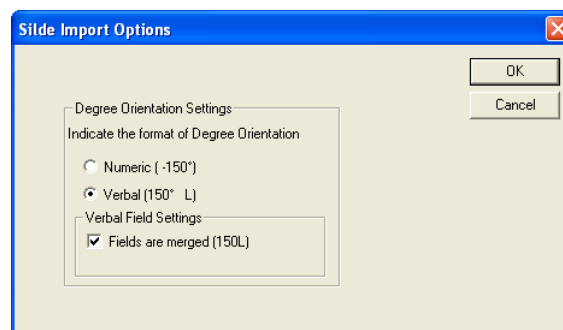


2. Select the file from the folder or drive with the corresponding navigational tools provided and either **double click** on the **file name** or **click once** and **click** on the **Open** button. This will activate the **Set delimiter** window as shown below.

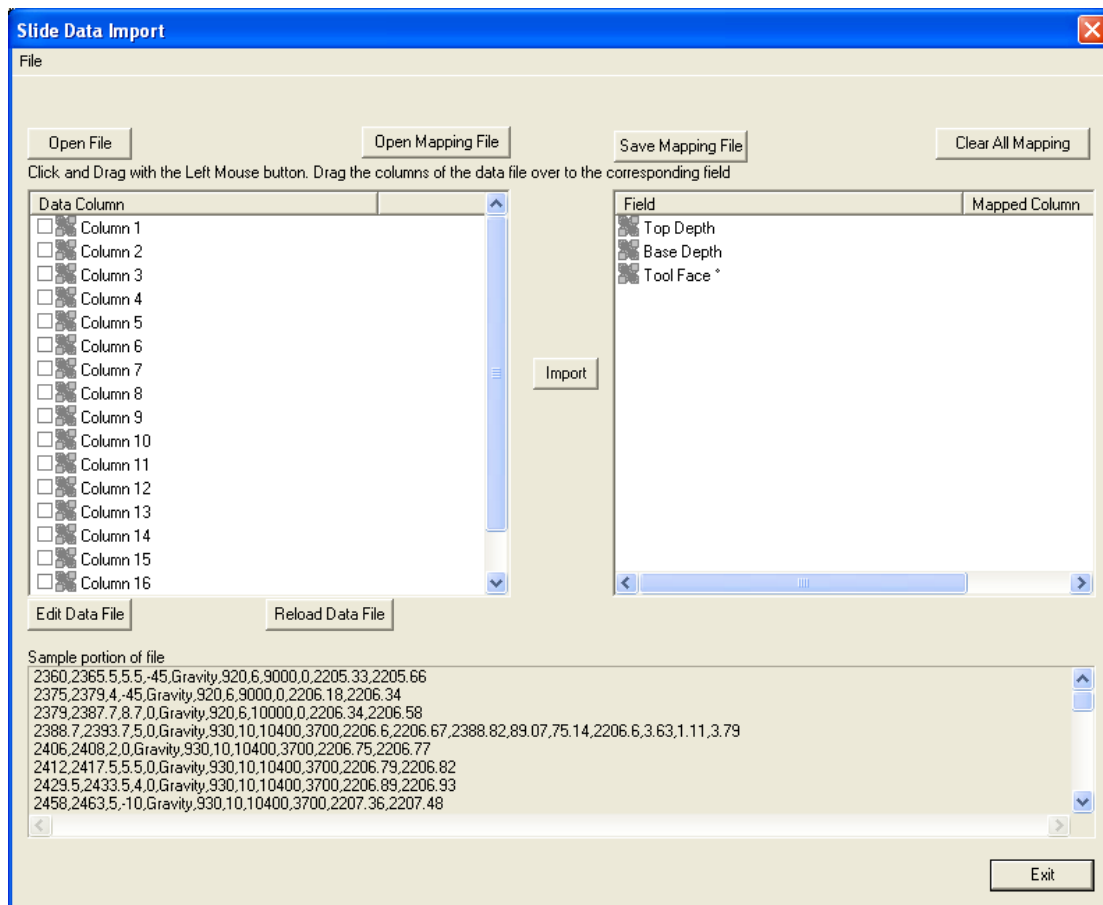
N.B. The one on the left the delimiter is set correctly the one on the right the delimiter is set incorrectly.



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.



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



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 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.

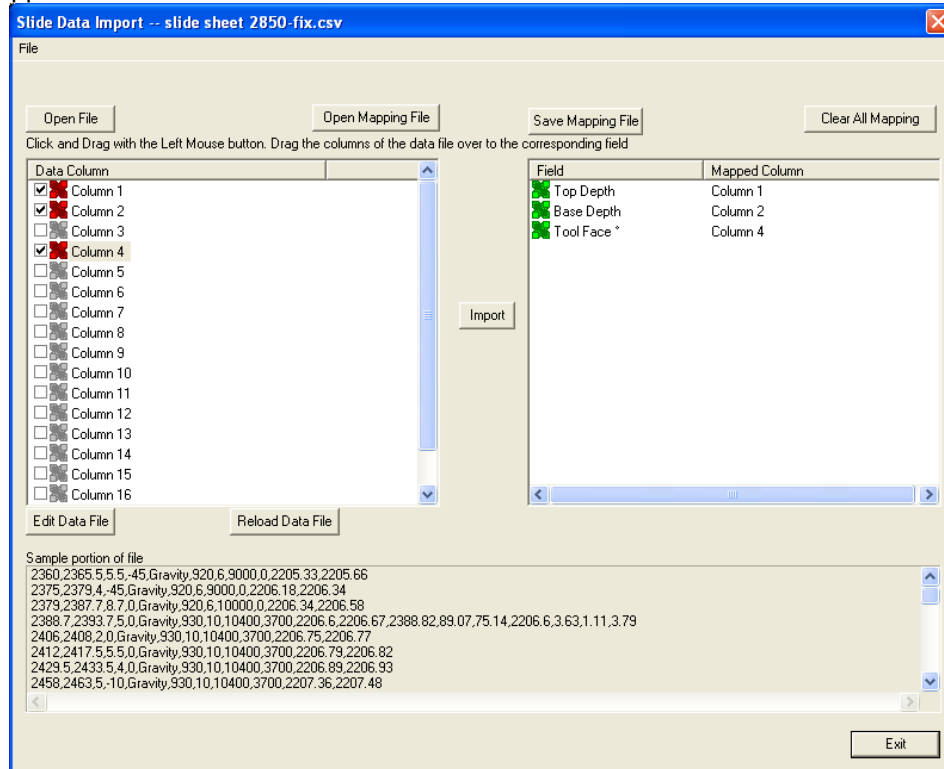
Importing / Mapping of Slide data.

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.



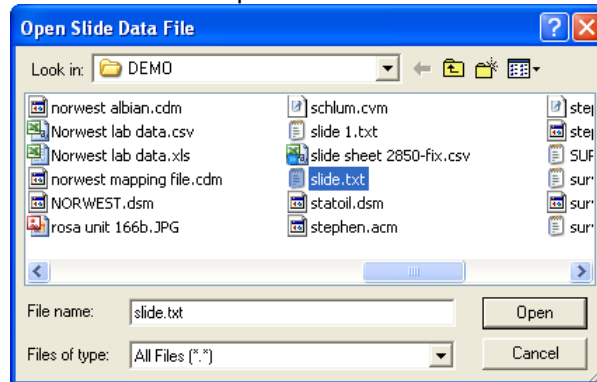
3. The user can save this mapping procedure at this time by **clicking** on the **Save Mapping File** button and giving this procedure a file name and folder to be used again at a later date when you would have to import this data again.
4. **Click** on the **Import** button. After the data has been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

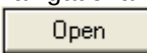


5. **Acknowledge** the Import message. **Click** on the **OK** button and then click on the  to exit or **click** on the **Exit** button to close the Window.

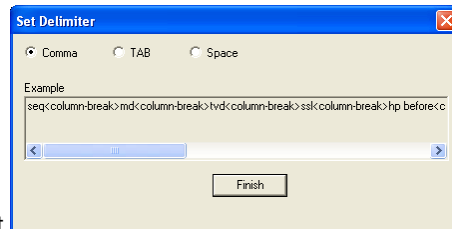
How to Import Slide Data with an Existing mapping file.

- 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.

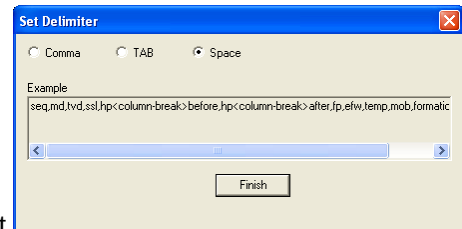


- Select the file from the folder or drive with the corresponding navigational tools provided and either **double click** on the **file name** or **click once** and **click** on the  **Open** button. This will activate the **Set delimiter** window as shown below.

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

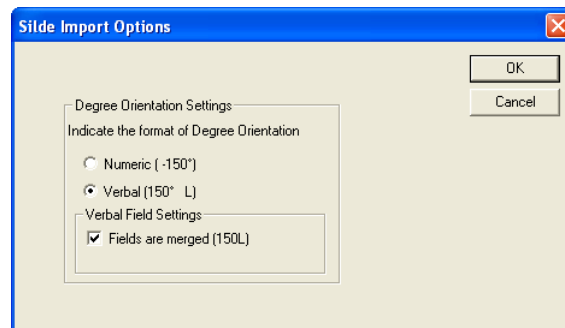


Correct

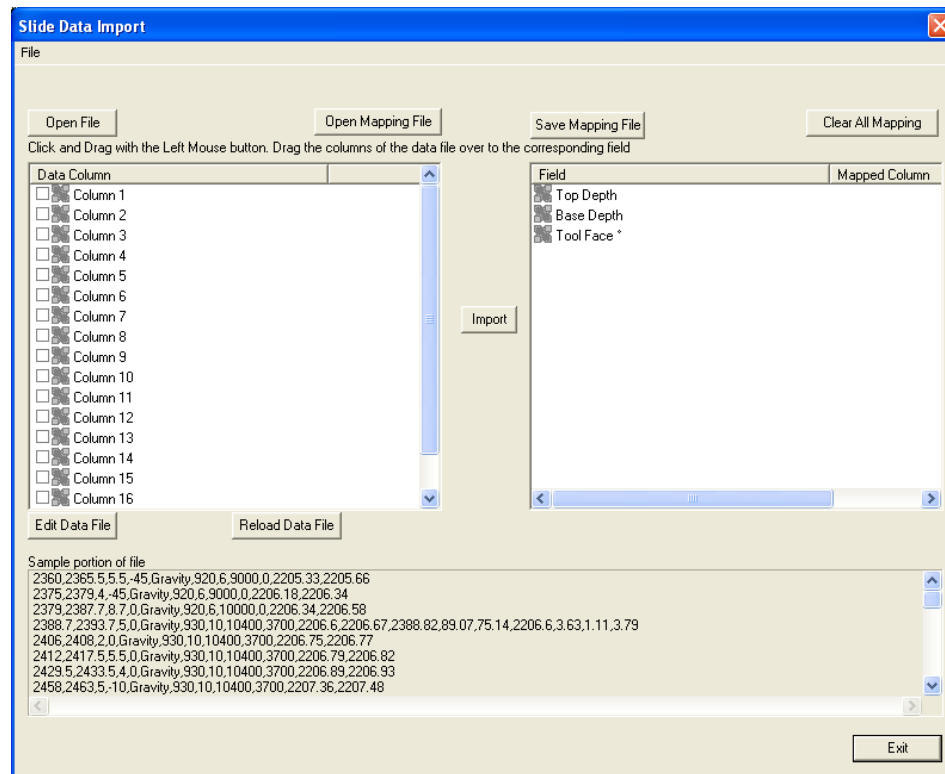


Not Correct

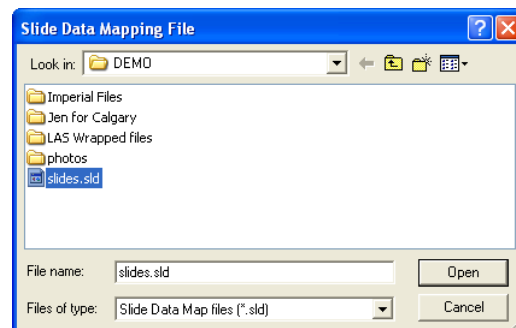
- Highlight the correct corresponding  button beside Comma, TAB or Space delimiter (if shown correctly the Example should read <column-break> between the data columns. If you see this then **click** on the  **Finish** button to close this window and activate the Slide Import Options window shown below.



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



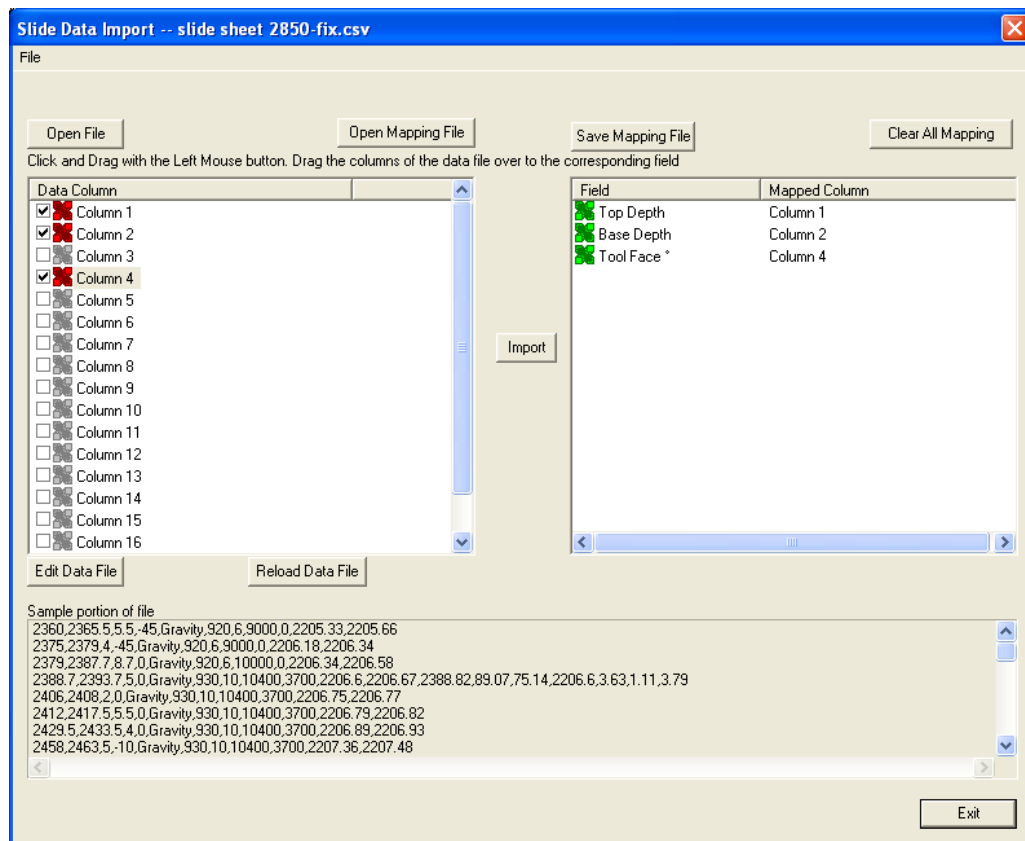
5. In the upper portion of the window **click** on the **Open Mapping File** button. This will activate an open file window.



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 **Open** 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.

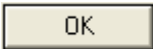
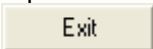
N.B. The user can **Right click** on the **Field** to remove the mapping.

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.



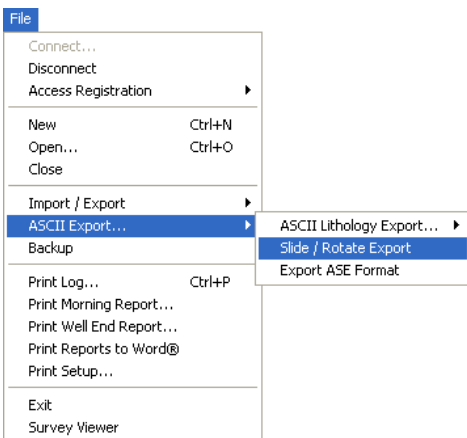
6. Click on the  button. After the data has been imported you will be prompted with a system message.



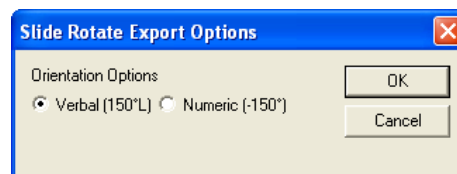
7. Acknowledge the Import message. Click on the  button and then click on the  to exit or click on the  button to close the Window.

Slide / Rotate Export

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.

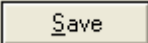
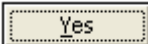


1. The first step in creating an ASCII or a comma delimited file is to select **ASCII Export** from the **File** menu selection. Then select the **Slide / Rotate Export** from the ensuing pop-out menu. This will open the Slide Rotate Export Option window shown below.



2. **Activate** the **Radio Button** beside the Toolface Orientation option you want for your ASCII export. **Click** on the  **Button** This action will open the

Specify File Name window.

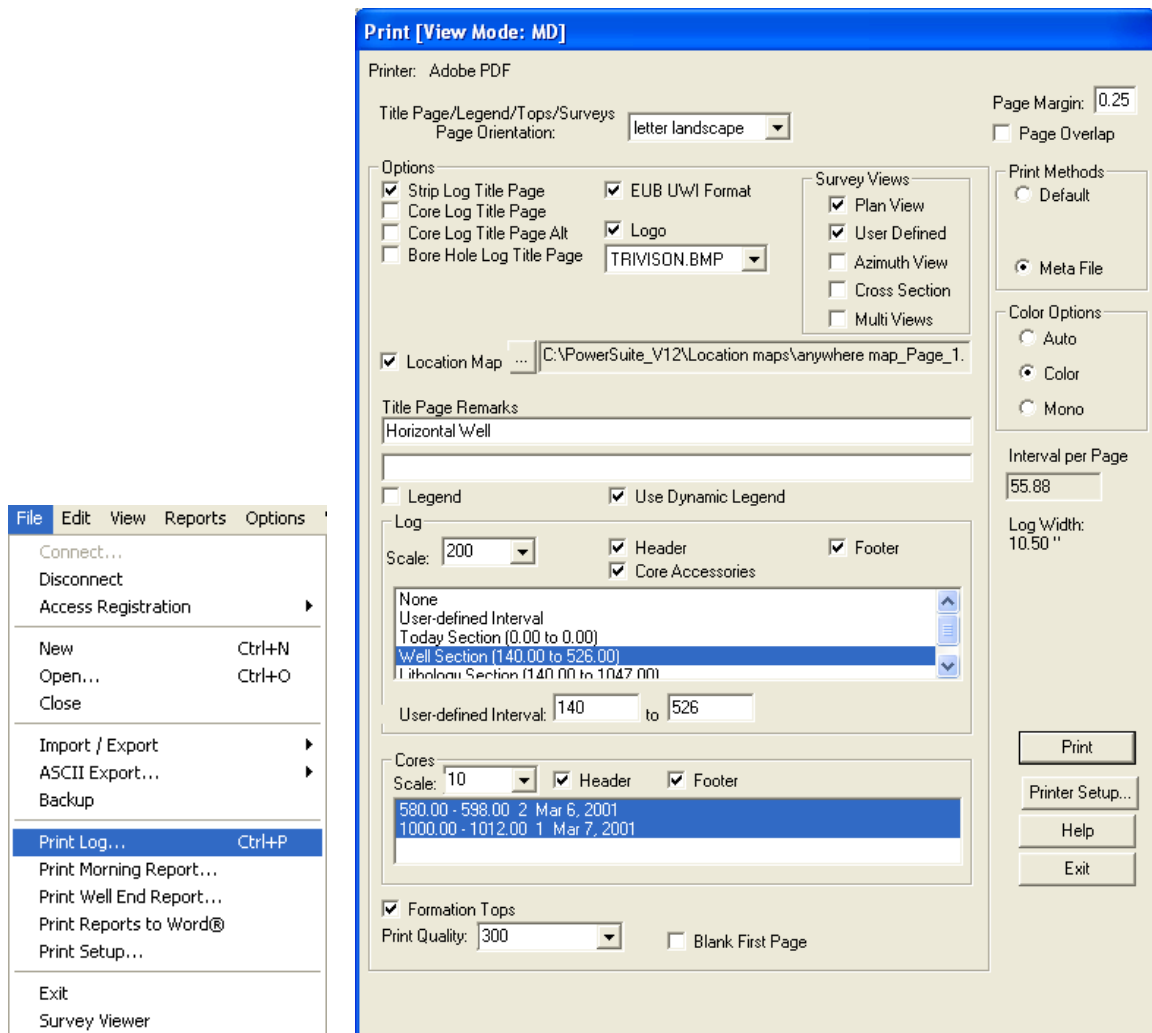
3. **Type in a file name** (without extension) and select the drive and directory you wish the file to be exported to. Then **click** on the  **button**. This will activate a System Info – Slide / Rotate Extract window.
4. The System Info – Slide / Rotate Toolface Extract Window will notify you that a file called (file name from step 3) will be create in directory (directory specified in step 3). Do you wish to proceed? **Click** on the  **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.

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 is in at the time of the activation of the Print Log window.



2. **Title Page/Legend/Tops** **Page Orientation:** **legal landscape** Select the appropriate paper orientation from this drop box field and the **Title Page**, **Legend**, and **Formation Tops** will automatically conform to the selected orientation. There are four (4) types of paper orientation to choose from: **letter portrait or landscape** and **legal portrait or landscape** settings.

Note: The letter or legal landscape or portrait settings selected from within the Print Log window will NOT override the paper orientation settings selected in the printer's **Properties** window. Therefore, you must also modify the paper orientation settings in your printer's **Properties** window to letter or legal landscape.

3. **Strip Log Title Page** Activate this check box ☒, if you wish to printout a full Wellsight Version of the Title Page.
4. **EUB UWI Format** If you are printing the Striplog Title page and you are in Alberta the EUB format should be selected.
5. **Core Log Title Page** Activate this check box ☒, if you wish to printout an abbreviated version of the Core Log Title Page.
6. **Core Log Title Page Alt** Activate this check box ☒, if you wish to printout an abbreviated version of the Core Log alternate title Page.
7. **Sample Log Title Page** Activate this check box ☒, if you wish to printout an abbreviated version of the Sample Log Title Page.

☒ Logo
 TRIVISON.BMP

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

Note: This must be a bitmap image file (*.bmp) if you want a logo printed out on the title page. Also, it is recommended that the bitmap image should be a square image, because **Power*Suite** will shrink or expand the image to fit the logo space on the **Title Page**. This bitmap must be placed in the **Powersuite_V12\logo directory for the application to find it.**

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. 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.

Note: 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. Log Scale: 240 Select or type in the **Scale** for the main log to be printed out at, in the **Scale** drop box field.

Note: If you see 2" or some other inch related printing scale and you want to see a ratio type scale Change the System Options under the Options pull down menu and activate the Display Tab and Activate this check box ☒ beside Use Metric Style Scales.

The **Well Section** interval is derived from the **Top** and **Base Depth** values entered into the **Print Sections** window under the **Edit** pull down menu. (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.

19. ☒ Header Activate this check box ☒ 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 box ☒ 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**.

Note: **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 under the **Edit** pull down menu. (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:** 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 ☒ to have the track headers printed out with **the core log**.
27. ☒ **Footer** Activate this check box ☒ 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.

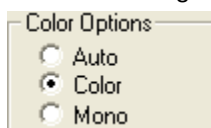
Page Margin: The page margin field is available, primarily, when you are printing to Adobe Acrobat writer. When a numerical value in inches is typed into this field it will initiate a top and left margin for the templates (Title Page, Legend and Formation Tops) as well as a left margin for the main log.

☐ **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.

Default Activating the default radio button ☒ forces Power*Log / Core & Curve to use a **raster or bitmap graphic printing method**. This printing method is generally used with Laser printers but not exclusively so.

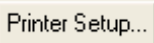
Meta File Activating the **Meta File** radio button ☐ forces Power*Log / Core & Curve to use the **meta file technology printing method**. This printing method was developed for the newer models of printers on the market today as well as using the Adobe Acrobat Distiller or pdf printing technology.

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



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  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.

29. Click on the  button to activate the **Print Setup** window and confirm that the correct printer 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.

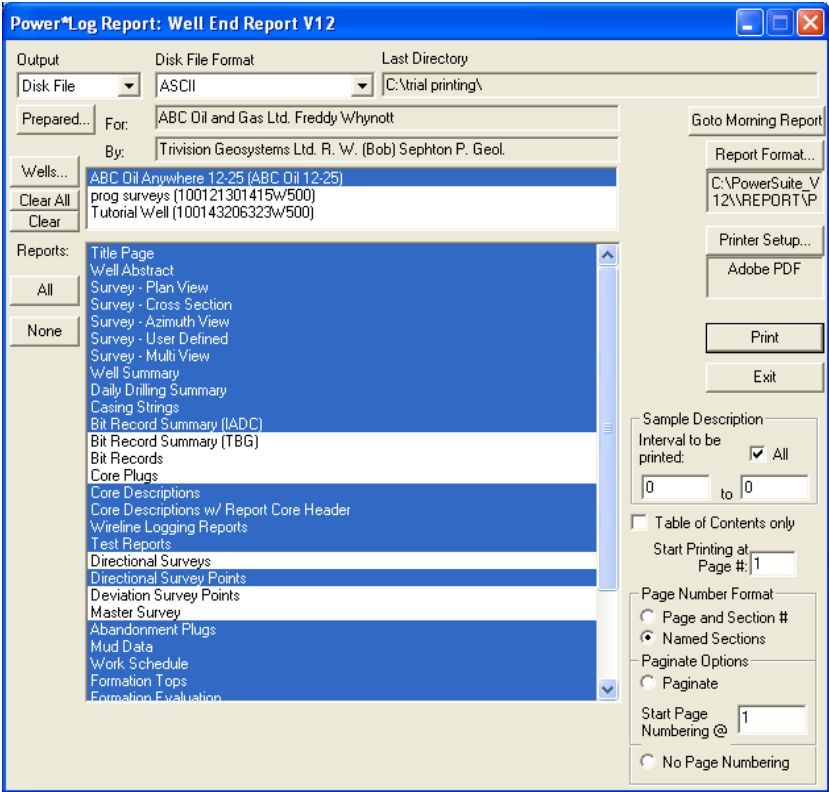
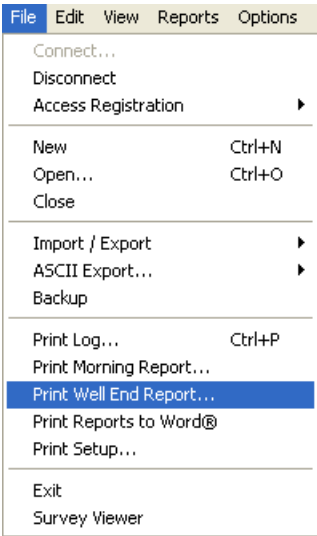
32. When you are ready to print your log, click on the  button.

Note: 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 Well End Report

Prints the reports for the end of a well

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:



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 **Printer Setup...** button.

2. If printing to a **Disk File** (on your hard drive or to a flash drive), select the file format from the **Disk File Format** field drop box arrow.
3. If the default well is not the well you want to print from then you can 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** button. To remove all **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.

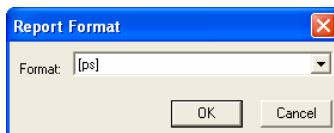
4. Select/highlight and/or deactivate any of the reports in the **Reports** field by clicking on them once. To select/highlight all of the reports, click on the **All** button. To deactivate all of the reports, click on the **None** button.

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**.

5. 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 ☐.
6. 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.

Note: 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 not be printed out.

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

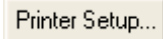


8. Using the **Format** field drop down arrow, click on the style of **Report Format** that you wish to use. Then, click on the **OK** button, when you are finished.

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.

9. 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.

10. 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.**
11. 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.
12. Click on the  button and then select the 8.5" x 11" Portrait paper size.
13. Click on the  button.
14. **If you are printing to a disk file** you will then be prompted with 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. **Ascii** documents will use the *.txt file extension.

Note: If you want to print to **MS Word** then please select the **Print to Word** option under the **File pull down menu**. The **Survey views cannot be printed to a disk file or to preview**. They can only be printed to a directly to a printer or to a pdf file format.

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 **ASCII Disk File Format** will be used:

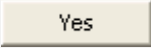
Report Name	File Output Name	Report Name	File Output Name
Title Page	trialtt1.txt	Well Abstract	trialwa1.txt
Survey Plan View	Not available	Survey Cross Section	Not available
Survey Azimuth View	Not available	Survey User Defined	Not available
Survey Multi View	Not available	Well Summary	gwellsum.pdf
Daily Drilling Summary	trialdr1.txt	Casing Strings	trialcs1.txt
Bit Record Summary (IADC)	trialbs1.txt	Bit Record Summary (TBG)	trialbd1.txt
Bit Record Summary	trialbr1.txt	Core Plugs	trialcp1
Core Descriptions	trialcd1.txt	Core Description / Report Core Header	trialct1.txt
Logging Reports	triallg1.txt	Test Reports	trialts1.txt
Directional Surveys	trialsv1.txt	Directional Survey Points	trialsp1.txt
Deviation Survey Points	trialds1.txt	Master Survey Group	trialmg1.txt
Mud Data	trialfl1.txt	Abandonment Plugs	trialpg1.txt
Work Schedule	trialwk1.txt	Formation Tops	trialtp1.txt
Formation Evaluation	trialfm1.txt	Sample Descriptions	trialst1.txt
Sample Description / Tops	trialfs1.txt	Sidewall Cores	trialsw1.txt
Core Plugs	trialcp1.txt	MDT Run	trialmdt1.txt
Geology Dictionary	trialgd1.txt	Table of Contents	trialtc1.txt

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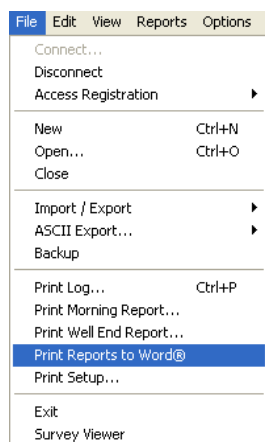
Below is a list of the file names that Power*Log / Core & Curve™ uses to identify different reports for the pdf printer selection. For the file names below you will see the Crystal Reports - before every file name:

Report Name	File Output Name	Report Name	File Output Name
Title Page	wendttle.pdf	Well Abstract	abstract.pdf
Survey Plan View	Survey Plan View.pdf	Survey Cross Section	Survey Cross Section.pdf
Survey Azimuth View	Survey Azimuth View.pdf	Survey User Defined	Survey User Defined.pdf
Survey Multi View	Survey Multi View.pdf	Well Summary	gwellsum.pdf
Daily Drilling Summary	drillsum.pdf	Casing Strings	casing.pdf
Bit Record Summary (IADC)	bittable.pdf	Bit Record Summary (TBG)	bittabdb.pdf
Bit Record Summary	bitrec.pdf	Core Plugs	corplug.pdf
Core Descriptions	fcordsc.pdf	Core Description / Report Core Header	fcortext.pdf
Logging Reports	logging.pdf	Test Reports	test.pdf
Directional Surveys	survey.pdf	Directional Survey Points	survpnts.pdf
Deviation Survey Points	survptss.pdf	Master Survey Group	msurvpt.pdf
Mud Data	fluid.pdf	Abandonment Plugs	plug.pdf
Formation Tops	tops.pdf	Work Schedule	worksch.pdf
Sample Descriptions	samptext.pdf	Formation Evaluation	formaton.pdf
Sidewall Cores	sidewall.pdf	Sample Description / Tops	fsmpntext.pdf
MDT Run	MDT.pdf	Geology Dictionary	geodict.pdf
Table of Contents	wendtoc.pdf		

**The  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. If you **click** on  button, the program will remember every setting that you made to the window and will default to these settings the next time you enter the **Print Well End Report** window.

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.

Click on **Print Reports to Word**, under the **File** menu selection, to activate the **Print Reports to Word** window shown below. The user can also click on the

Shortcut button  located on the toolbar.

Overview of Well End Reports Tab Window

Prepared For
 Company: Camden Resources
 Name: Fred Whalling

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

Prepared By
 Company: TriVision Geosystems Ltd.
 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 100

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.

Depth Range (leave blank for all)
 to

The Depth Range fields are available to print a portion or depth interval of the Sample or Core descriptions as well as Devon Malibu Format Moring Reports. Leave these fields blank to print them all.

☒ Formation Tops in Desc.

Activate this check box if you want to include the Formation tops in the Sample or Core Descriptions report.

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 all the reports and you can activate the reports you do not wish to print.

Clear All

This button will deselect all the reports and you can activate the reports you wish to print.

Print to Word

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

Reporting Tool

Well End Reports | Morning Reports

print status

Prepared For
 Company: Camden Resources
 Name: Fred Whalling

Prepared By
 Company: TriVision Geosystems Ltd.
 Name: R.W. (Bob) Sephton P. Geol.

Choose a Well
 Camden 100

Depth Range (leave blank for all)
 to

☒ Formation Tops in Desc.

Deviation Survey Points
 Abandonment Plug
 Drilling Fluid Summary
 Work Schedule
 Formation Tops.
 Formation Eval.
 Sample Desc.
 Sidewall Core
 MDT
 Geological Dictionary
 Devon (Malibu) Format

☐ Single File

Print to Word

Select All
 Clear All

How to Print Well End 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. 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.

- 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 **Select All** button. To deactivate all of the reports, click on the **Clear All** button. . If you are printing sample or core Descriptions select if you wish to print tops or all the descriptions.
- 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

The screenshot shows the 'Reporting Tool' window with the 'Morning Reports' tab selected. The window has a title bar with standard Windows controls. Below the title bar, there are two tabs: 'Well End Reports' and 'Morning Reports'. A 'print status' label is present. A 'Choose a Well' dropdown menu shows 'ABC Oil Anywhere 12-25'. A table lists dates from February 25, 1997, to March 7, 1997, with corresponding values. The 'Mar 01, 1997' row is highlighted. To the right of the table are checkboxes for 'Sections to include' and 'Single Report Options'. The 'Sections to include' section has checkboxes for 'Lithology Summary', 'Total Gas Summary', 'Chromatography Summary', and 'Include Cost (\$)'. The 'Single Report Options' section has checkboxes for 'Bit Records (TBG)', 'Bit Records (IADC)', 'Casing', and 'Formation Summary'. There are also dropdown menus for 'Directional Surveys' and 'Deviation Surveys', both set to '2' and labeled 'group'. A 'Depth Range...' button is at the bottom right. A 'Print to Word' button is at the bottom left.

Dates	
Feb 25, 1997	119
Feb 26, 1997	149
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

Choose a Well
ABC Oil Anywhere 12-25

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.

Dates

Feb 25, 1997	119
Feb 26, 1997	149
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

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.

Sections to include

☒ Lithology Summary

☒ Total Gas Summary

☐ Chromatography Summary

☒ Include Cost (\$)

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.

Single Report Options

☐ Bit Records (TBG)

☒ Bit Records (IADC)

☒ Casing

☒ Formation Summary

☒ Directional Surveys 2 group

☐ Deviation Surveys group

Depth Range...

This gives 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

OK Cancel

When the user clicks on the Depth Range... this 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.

dates to a single file. Or created.

☐ Single File Activate this check box if you wish to print multiple report conversely deactivate this check box if you want multiple files

Select All

Clear All

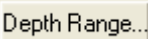
Print to Word

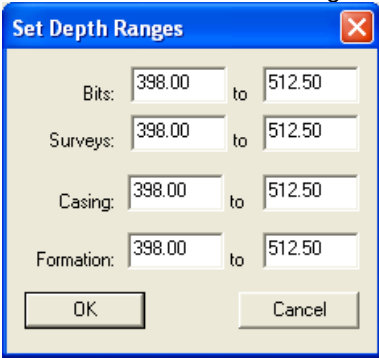
This button will highlight all the am report dates.

This button will deselect all the am report dates.

This 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.

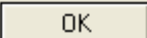
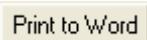
1. Click on **Print Report to Word**, under the **File** menu selection, to activate the **Print Reports to Word** window. The user can also click on the shortcut  button located on the toolbar.
2. Click on the **Morning Reports** tab to activate that portion of the window.
3. Choose the **well** you 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  button. To deactivate all of the reports, click on the  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  button to activate the window and change the depths accordingly.



The 'Set Depth Ranges' dialog box is shown with the following fields and values:

Category	Start Depth	End Depth
Bits:	398.00	512.50
Surveys:	398.00	512.50
Casing:	398.00	512.50
Formation:	398.00	512.50

Buttons: OK, Cancel

8. Click on the  button to return to the main window.
9. Click on the  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.

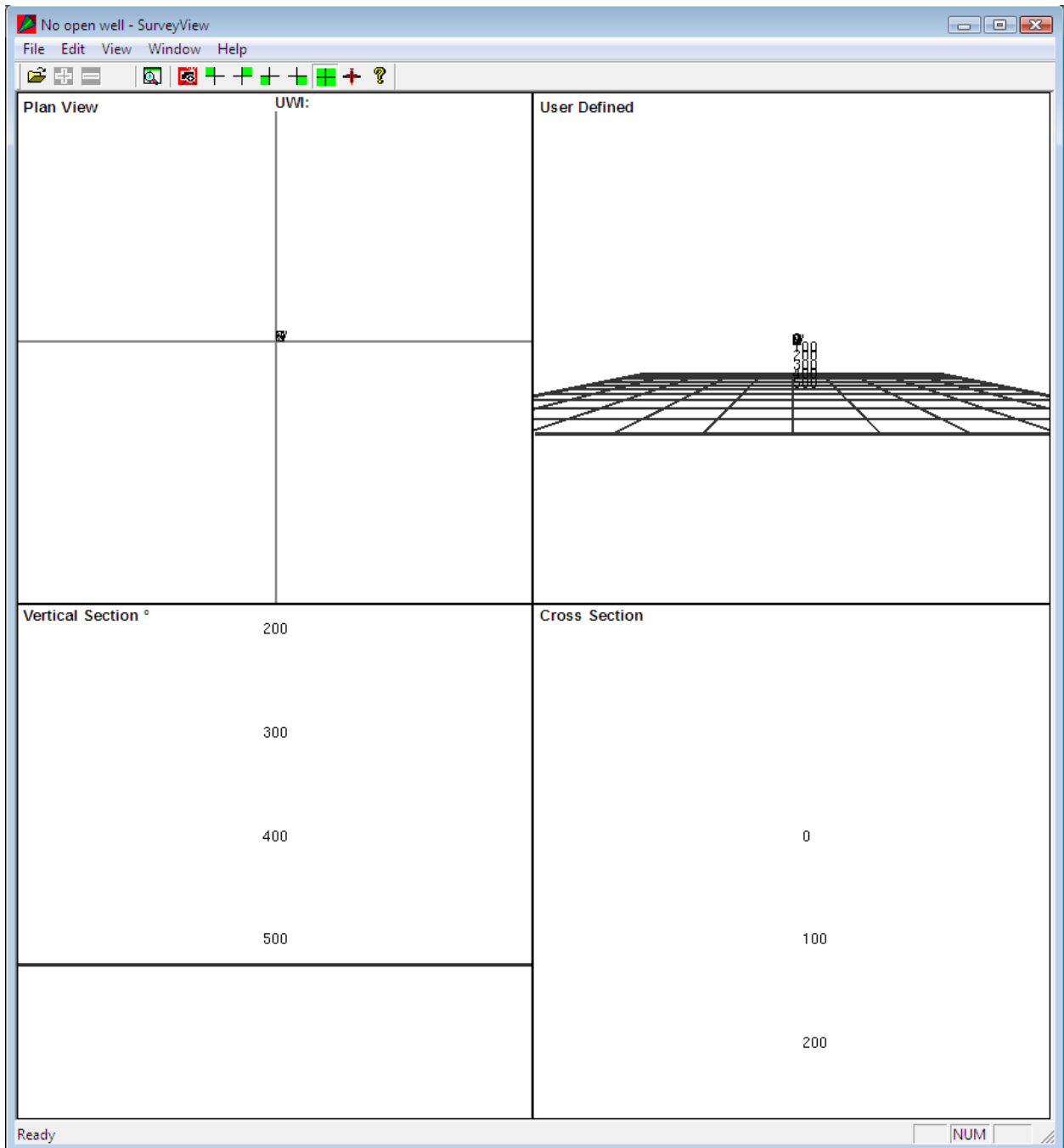
File Menu – Survey View Module

This module allows the user to view a single well or multiple wells 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 and the well end report.

Note: The user only has to fill in the metes and bounds for a single well but you must fill in the longitude and latitude fields for all subsequent well plots. The subsequent wells must be within a reasonable distance from the original well for it to plot.

Operating Procedures

1. Click on the **Survey View**  Icon on the Toolbar OR go under the **File Menu** in **Power*Log / Curve / Core** and select the **Survey Viewer**. This will activate the Survey View window shown below.



Note: It is important to know some of the well location information before proceeding with step 1. If you are in the DLS land survey system you should know the metes and bounds for the surface hole coordinate values and if you are in the NTS survey system you should know your surface hole location identification. If you are adding a second well to the view you must know the longitude and latitude of the surface hole location in degrees, minutes and seconds down to 3 decimal places

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 **New Survey** button on the toolbar **or click** on **New Survey** from the **File** menu selection to activate the Select Survey to Plot window.

File

Save Screen

New Survey

...Connect to Database

...Disconnect from Database

Exit

Select Survey to Plot

Surveys

Bore Hole Long/Lat (Surface Location)

Lat: Degree: 0 Minutes: 0 Seconds: 0

Long: 0 0 0 ☒ DMS Format

DLS

☐ Enable

Meters North of South Boundary: 0

Meters East of West Boundary: 0

Road Allowance: 20.120000

Section: 1

Township: 1

Range: 1

Meridian: 1

NTS

☐ Enable

Series: 100

Area: A

Sheet: 1

Block:

Unit: 1

1/4 Unit:

Corner: SE

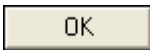
NS: 0

EW: 0

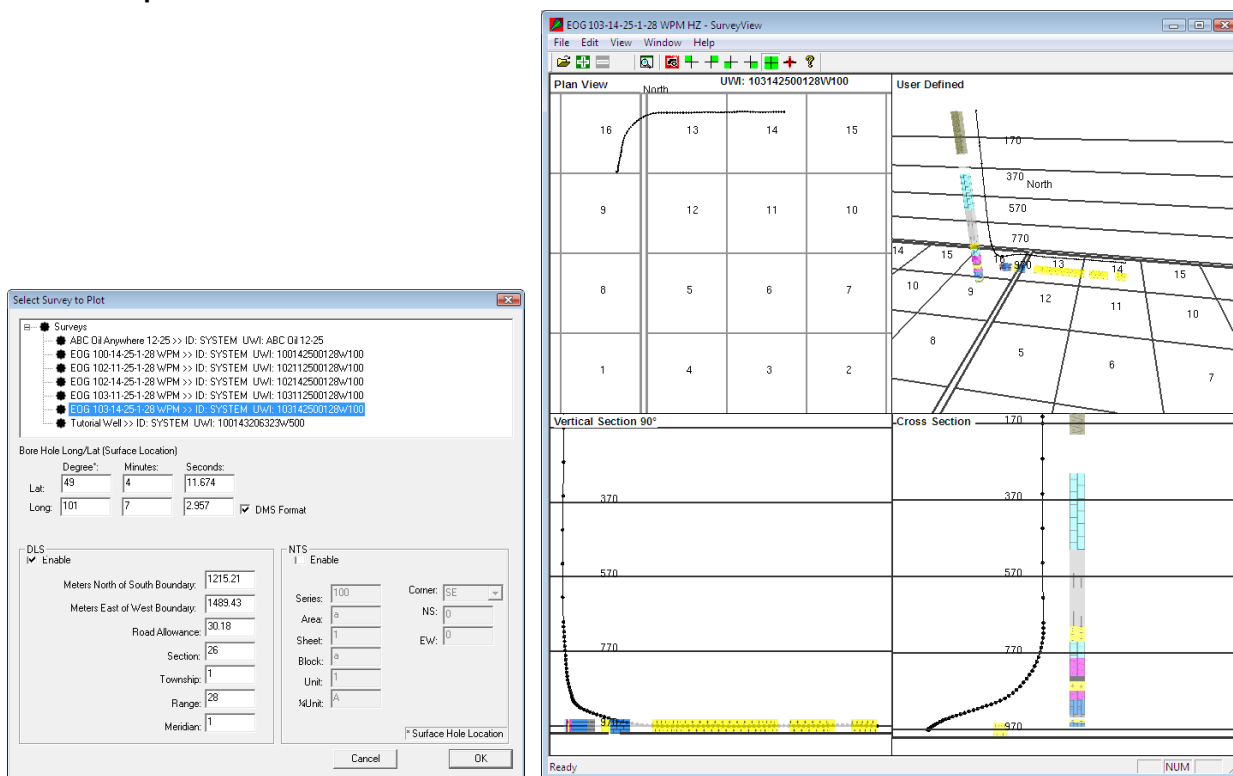
* Surface Hole Location

Cancel OK

- 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 will 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.

DLS Example



The surface hole Longitude and Latitude fields do not have to be filled in if this is the first well to plot in the survey view application. Any subsequent well data to be displayed the user must fill in the surface hole well co-ordinates for both Latitude and Longitude in degrees minutes and seconds and we will utilize these fields to get subsequent well data onto the plot. If you enable the check box beside the DLS your Plan view and User-defined view will have the DLS grid system marked. The DLS Survey breakdown would be as follows for this example location

09-26-001-28 W1M. Where the **09** is the **Location**, **26** is the **Section**, **001** is the **township** and **28** is the **range** and the **1** is the **meridian**

DLS
☒ Enable

Meters North of South Boundary:

Meters East of West Boundary:

Road Allowance:

Section:

Township:

Range:

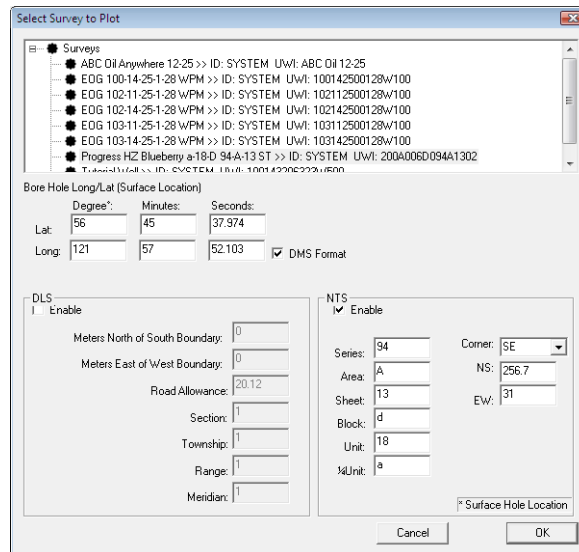
Meridian:

The **Meters North of the South Boundary** must be just that. If your survey plat gives you from the north boundary, then you have to subtract that number from 1,609.34 m to give you the meters North of South Boundary. The **Meters East of the West Boundary** must be just that. If your survey plat gives you from the east boundary, then you have to subtract that number from 1,609.34 m to give you the meters East of West Boundary. The **Road Allowance** field (these are dead areas in the DLS grid system) is traditionally the default value (20.12) but can in some places (30.18). The **Township** field (Values from 1 to 126) depends on the well location. It is necessary because we have to accommodate for correction lines if your well crosses those on the

plan or user defined views. The **Section** field (Values 1-36) depends on the well location. It is necessary because we have to accommodate for road allowances if your well crosses those on the plan or user defined views

- 3) Click on the  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.

NTS Example



Select Survey to Plot

Surveys:

- ABC 01 Anywhere 12:25 >> ID: SYSTEM UWI: ABC 01 12:25
- EDG 100-14-25-1-28 WPM >> ID: SYSTEM UWI: 100142500128W100
- EDG 102-11-25-1-28 WPM >> ID: SYSTEM UWI: 102112500128W100
- EDG 102-14-25-1-28 WPM >> ID: SYSTEM UWI: 102142500128W100
- EDG 103-11-25-1-28 WPM >> ID: SYSTEM UWI: 103112500128W100
- EDG 103-14-25-1-28 WPM >> ID: SYSTEM UWI: 103142500128W100
- Progress HZ Blueberry a-18-D 94-A-13 ST >> ID: SYSTEM UWI: 200A006D094A1302
- Trinidad 18-11-25-1-28 WPM >> ID: SYSTEM UWI: 180112500128W100

Bore Hole Long/Lat (Surface Location)

Degree: Minutes: Seconds:

Lat: 56 45 37.974

Long: 121 57 52.103 ☒ DMS Format

DLS

☐ Enable

Meters North of South Boundary: 0

Meters East of West Boundary: 0

Road Allowance: 20.12

Section: 1

Township: 1

Range: 1

Meridian: 1

NTS

☒ Enable

Series: 94 Corner: SE

Area: A NS: 256.7

Sheet: 13 EW: 31

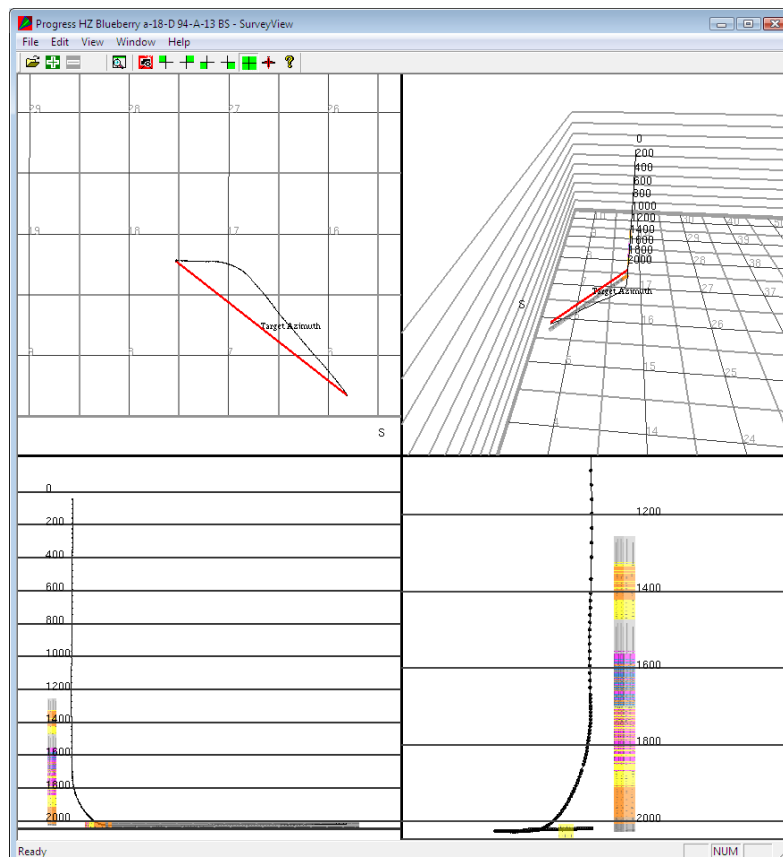
Block: d

Unit: 18

Unit: a

☐ Surface Hole Location

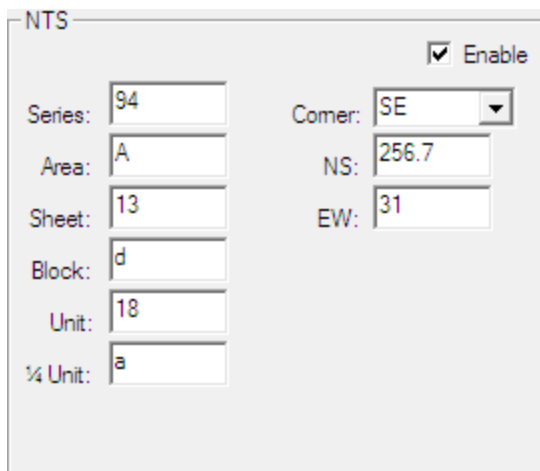
Cancel OK



If you **enable the check box** beside the NTS your Plan view and User-defined view will have the NTS grid system marked.

Below is an example of the NTS survey system location. **Remember we are dealing with the surface location.**

Below is an example of the NTS survey system location. **Remember we are dealing with the surface location.**



a-18-D / 94-A-13 whereas **a** is the $\frac{1}{4}$ Unit, **18** is the Unit, **D** is the block, **94** is the series, **A** is the Area and **13** is the sheet.

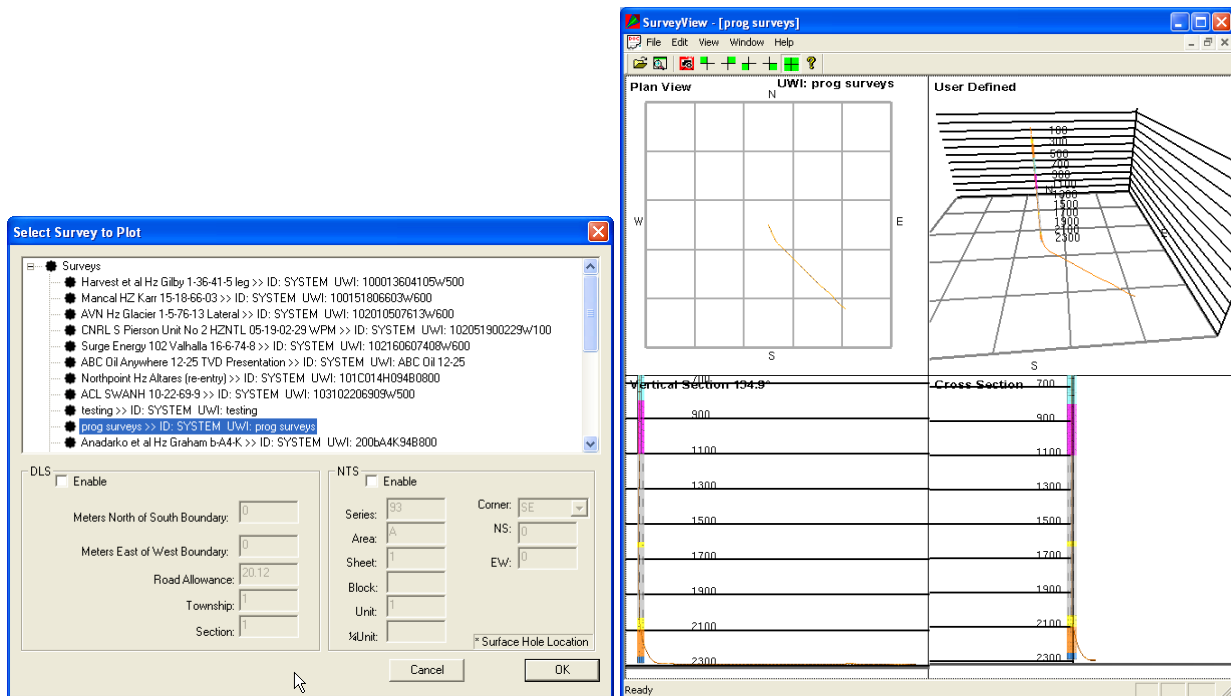
Fill in the surface location fields from the surface location given to you in the survey plat. In this NTS system we can use any corner for the measurements on the surface location but you must pick one from the drop box Then fill in the **Meters** from the **North / South Boundary**. Then fill in the **Meters** from the **East / West Boundary**. If you are **adding multiple wells** then you **must** also fill the surface hole **Longitude and Latitude** fields to not have to be filled in if this is the first well to plot in the survey view application. Any subsequent well data to be displayed the user must fill in the surface hole well co-ordinates for both Latitude and Longitude in degrees minutes and seconds

and we will utilize these fields to get subsequent well data onto the plot.

Fill in the surface location fields from the surface location given to you in the survey plat. In this NTS system we can use any corner for the measurements on the surface location but you must pick one from the drop box Then fill in the **Meters** from the **North / South Boundary**. Then fill in the **Meters** from the **East / West Boundary**. If you are **adding multiple wells** then you **must** also fill the surface hole **Longitude and Latitude** fields to not have to be filled in if this is the first well to plot in the survey view application. Any subsequent well data to be displayed the user must fill in the surface hole well co-ordinates for both Latitude and Longitude in degrees minutes and seconds and we will utilize these fields to get subsequent well data onto the plot.

3. Click on the  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.

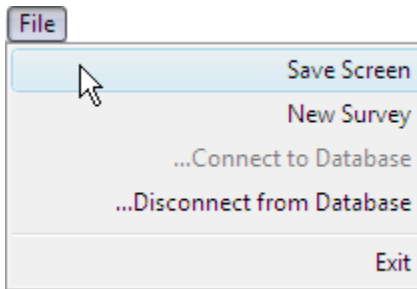
No Survey System



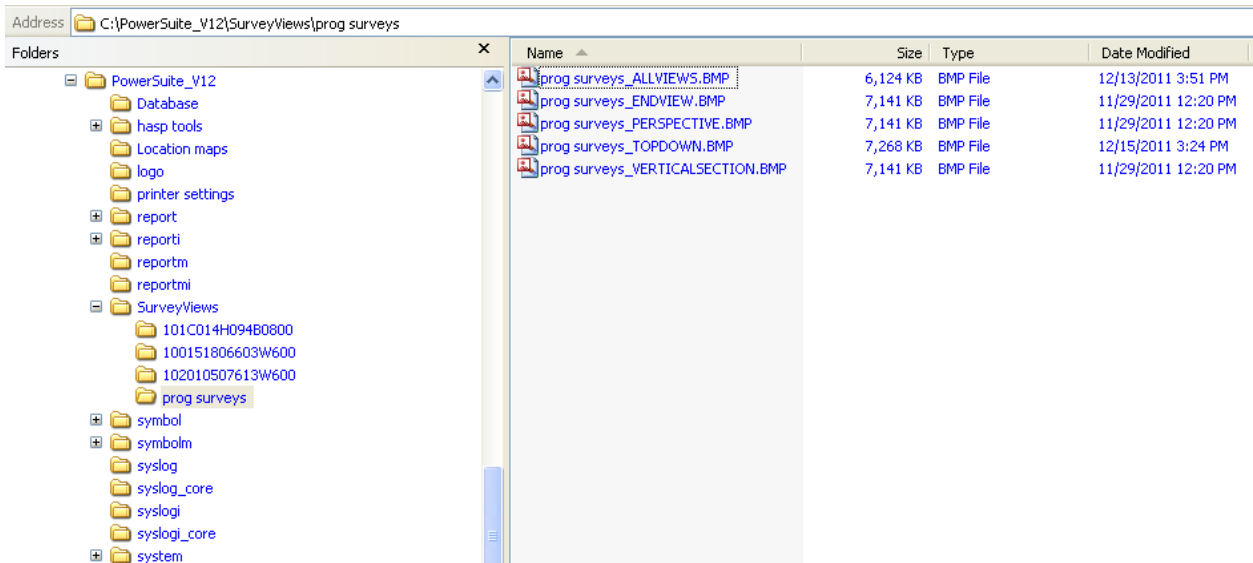
If you **do not enable** the check boxes beside the DLS or NTS your Plan view and User-defined view will have a generic grid system marked and your well centre will be right in the middle of the plot.

- Click on the  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.

File Menu- Save Screen



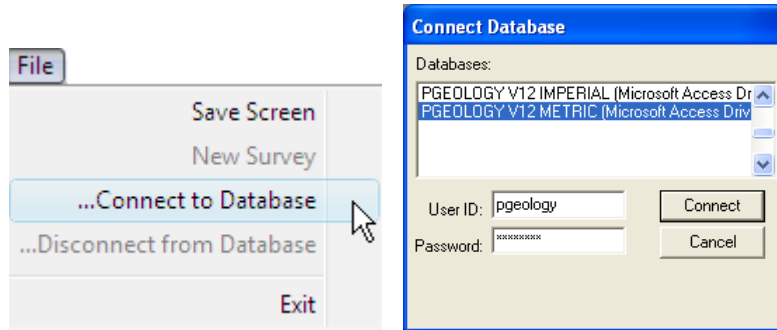
Save Screen Selection – This allows the user to capture and save a screen shot of the survey view at the time of selecting. The User can also **Click** on the **Icon** on the **tool bar**. The user can save up to five (5) screen shots. These screen shots can be printed along with the striplog in our Power*Suite applications (Log, Curve, Core) as well as the well end report printing module. The screen shots will be saved in the PowerSuite_V12/SurveyViews/UWI folder for the well. A screen capture of the directory structure is shown below.



File Menu- Connect to Database

Connect to database Selection – This selection allows the user to connect to a PGEOLOGY V12 database.

- 1.) Click on the File Menu and Select Connect to Database. This will activate a **Connect Database** window.

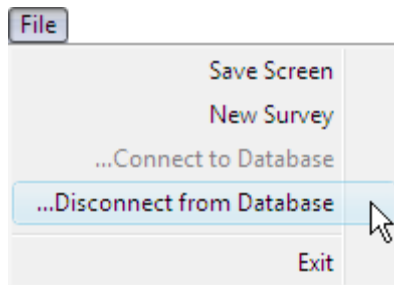


- 2.) Highlight the **PGEOLOGY V12 METRIC (Microsoft Access Driver[*].mbd))** database by clicking on it once.
- 3.) Move your mouse pointer to the **User ID** field and click. This will activate a flashing cursor in the **User ID** field. Type **"pgeology"** in the **User ID** field. Press the **Tab** key on the keyboard to move to the **Password** field.
- 4.) Type **"pgeology"** in the **Password** field and then click on the **Connect** button. The program will now load various dictionaries and then activate an **Open Log** window.

File Menu- Disconnect to Database

Disconnect from Database Selection – This selection allows the user to disconnect from a PGEOLOGY V12 database.

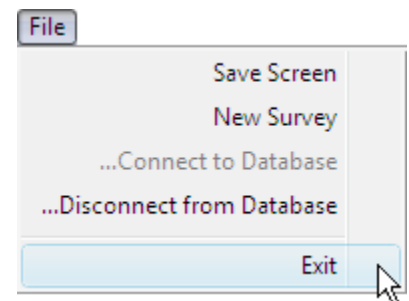
- 1.) Click on the File Menu and Select Disconnect to Database. This will **disconnect you from the Database**.



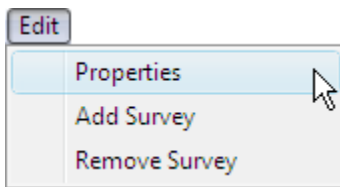
File Menu- Exit

Exit Selection – This selection allows the user to connect exit or close the survey viewer application.

- 1.) Click on the File Menu and Select Exit..



Edit Menu - Properties



The Properties 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

Display Setting Tab

 A screenshot of the 'Properties' window in the software, specifically the 'Display Settings' tab. The window contains various settings for the survey display. On the left, there are checkboxes for 'Point', 'Prognosis', 'Azimuth (Vertical Section Plane)', 'Survey Text', 'Wireframe', 'Formation Tops', and 'Scale'. The 'Point' checkbox is checked. In the center, there are sections for 'Grid Walls' (with checkboxes for North, South, East, West, and Corners), 'Grid Labels' (with input fields for N, S, E, W and offset from borehole), 'Line Sizes' (with input fields for Major and Minor), 'Scale' (with input fields for E+W- and N+S-), 'Lithology Column' (with input fields for E+W- and N+S-), and 'Log Tops' (with input fields for E+W- and N+S-). At the bottom, there are color selection buttons for 'Point Color' (orange), 'Back Color' (white), and 'Label Text Color' (black). The 'OK', 'Cancel', and 'Apply' buttons are at the bottom right.

Point Display Size: 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** check box changes the display from survey point balls with a thin line connecting the survey balls to a solid line view.

☐ **Prognosis** The display **Prognosis** check box 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** check box 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.

Formation Tops ☒ The display Formation tops check box will turn on/off the ability to display the Formation tops entered into Power*Log / Curve or Core and will display the Log / Sample or Prognosed tops as indicated in the Formation tops window.

Scale: ☒ The scale check box will turn on/off the ability to display the scale

Grid Walls

☒ North ☐ South ☒ East ☒ West ☒ Corners

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. The walls increment is defined by the scale increment of the window.

☒ **Corners** The corners check box turns on/off the corners connecting the grid walls. The ability to turn off the corners will mostly be used in the Vertical Section and Azimuth views if the target azimuth is tangential.

Grid Labels

N:	North	S:	S	E:	East	W:	W
offset from borehole							
E+W-:	0	0	100	-200			
N+S-:	100	-150	0	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 North, S, East and W) are displayed in the following example. The E+ / W- axis is left / right with a + value moving it to the right and a – value moving it to the left. The N+ / S- axis is up / down with a + value moving it up and a – value moving it down.

Line Sizes

Major: 3

Minor: 2

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 borehole

E+W-: 100

N+S-: 100

Increment: 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 **E+W - field** moves the scales to the East with a negative (-) value moves the scale to the West. A positive (+) value in the **N+S- 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 wall grid increment will be. The **Scale:** ☒ check box covered earlier will turn on/off the scale.

Lithology Column
offset from borehole

E+W-: Column Size:

N+S-: Opacity (0-1):

The **Lithology Offset** enables the user to control where the Interpretive Lithology column (displayed in TVD & Vertical Section) is positioned. The Interpretive Lithology column is displayed in all views but the Plan view. A positive (+) value in the **E+W-** field moves the Interpretive Lithology to the East with a negative (-) value moves the scale to the West. A positive (+)

value in the **N+S-** field moves the Interpretive Lithology to the North with a negative (-) value moves the scale to the South. The **Column size** field changes the width of the Interpretive Lithology displayed in the views. The **Opacity** field changes the ability to see through the column to view other data. 0 is transparent and 1 would be solid.

Log Tops

E+W-:

N+S-:

The **Log Tops** enables the user to control where the Formation tops are positioned.. The Log Tops are displayed in all views. A positive (+) value in the **E+W-** field moves the scales to the East with a negative (-) value moves the scale to the West. A positive (+) value in the **N+S-** field moves the scales to the North with a negative (-) value moves the scale to the South. The **Formation Tops** ☒ check box covered earlier will turn on/off the scale.

Point Color

Changes the color of the Survey Points / Line and target azimuth line display.

Back Color

Changes the background of the entire view.

Label Text Color

Changes the text color for the blocks, labels and Formation Tops.

Surface Coordinates Tab (Properties Window)

Properties

Display Settings Surface Coordinates

Bore Hole Long/Lat (Surface Location)

Degree': Minutes: Seconds:

Lat: ☒ DMS Format

Long:

Coordinate System

DLS ☒ Enable

Meters North of South Boundary:

Meters East of West Boundary:

Road Allowance:

Section:

Township:

Range:

Meridian:

NTS ☐ Enable

Series: Corner:

Area: NS:

Sheet: EW:

Block:

Unit:

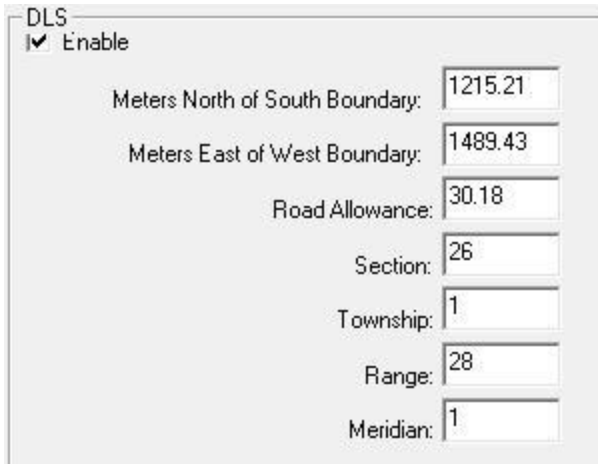
¼ Unit:

OK Cancel Apply

This portion of the window allows the user to add the long lat for the surface hole which is necessary if this is an additional well to be plotted or correct the DLS or NTS portion of the window. These fields were entered when the survey plot was initially started.

The surface hole Longitude and Latitude fields do not have to be filled in if this is the first well to plot in the survey view application. Any subsequent well data to be displayed the user must fill in the surface hole well co-ordinates for both Latitude and Longitude in degrees minutes and seconds and we will utilize these fields to get subsequent well data onto the plot. If you enable the check box beside the DLS your Plan view and User-defined view will have the DLS grid system marked. The DLS Survey breakdown would be as follows for this example location

09-26-001-28 W1M. Where the **09** is the **Location**, **26** is the **Section**, **001** is the **township** and **28** is the **range** and the **1** is the **meridian**



DLS

☒ Enable

Meters North of South Boundary: 1215.21

Meters East of West Boundary: 1489.43

Road Allowance: 30.18

Section: 26

Township: 1

Range: 28

Meridian: 1

The **Meters North of the South Boundary** must be just that. If your survey plat gives you from the north boundary, then you have to subtract that number from 1,609.34 m to give you the meters North of South Boundary. The **Meters East of the West Boundary** must be just that. If your survey plat gives you from the east boundary, then you have to subtract that number from 1,609.34 m to give you the meters East of West Boundary. The **Road Allowance** field (these are dead areas in the DLS grid system) is traditionally the default value (20.12) but can in some places (30.18). The **Township field** (Values from 1 to 126) depends on the well location. It is necessary because we have to accommodate for correction lines if your well crosses those on the plan or user defined views. The **Section** field

(Values 1-36) depends on the well location. It is necessary because we have to accommodate for road allowances if your well crosses those on the plan or user defined views

- 4) Click on the  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.

NTS Example

Properties

Display Settings | Surface Coordinates

Bore Hole Long/Lat (Surface Location)

Degree: Minutes: Seconds:

Lat: 56 45 37.974 ☒ DMS Format

Long: 121 57 52.103

Coordinate System

DLS ☐ Enable

Meters North of South Boundary: 0

Meters East of West Boundary: 0

Road Allowance: 20.12

Section: 1

Township: 1

Range: 1

Meridian: 0

NTS ☒ Enable

Series: 94 Corner: SE

Area: A NS: 256.7

Sheet: 13 EW: 31

Block: d

Unit: 18

¼ Unit: a

OK Cancel Apply

If you enable the check box beside the NTS your Plan view and User-defined view will have the NTS grid system marked.

Below is an example of the NTS survey system location. **Remember we are dealing with the surface location.**

NTS ☒ Enable

Series: 94 Corner: SE

Area: A NS: 256.7

Sheet: 13 EW: 31

Block: d

Unit: 18

¼ Unit: a

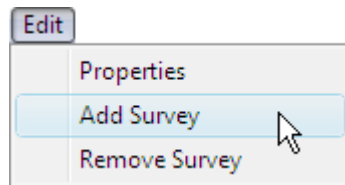
a-18-D 94-A-13 whereas **a** is the ¼ Unit, **18** is the Unit, **D** is the block, **94** is the series, **A** is the Area and **13** is the sheet.

Fill in the surface location fields from the surface location given to you in the survey plat. In this NTS system we can use any corner for the measurements on the surface location but you must pick one from the drop box Then fill in the **Meters** from the **North / South Boundary**. Then fill in the **Meters** from the **East / West Boundary**. If you are **adding multiple wells** then you **must** also fill the surface hole **Longitude and Latitude** fields to not have to be filled in if this is the first well to plot in the survey view application. Any subsequent well data to be displayed the user must fill in the surface hole well co-ordinates for both Latitude and Longitude in degrees minutes and seconds and we will utilize these fields to get subsequent well data

onto the plot.

- Click on the  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 – Add Survey



The User can add as many survey plots (as long as they are within a few miles / kilometers from the original well plot. This where the Longitude and latitude for the surface hole location is necessary for the addition well plots to work.

How to add a new survey plot to an existing plot.

- 1) Click on the **Edit menu** and select the **Add Survey** selection from the pull down menu or Click on the  on the toolbar. This will activate the Select Survey to plot window.

The screenshot shows the 'Select Survey to Plot' dialog box. It contains a list of surveys, a section for Bore Hole Long/Lat (Surface Location) with fields for Degree, Minutes, and Seconds for both Latitude and Longitude, and checkboxes for DMS Format. There are also sections for DLS (Distance Location System) and NTS (North Township System) with various input fields and checkboxes.

Select Survey to Plot

Surveys

- ABC Oil Anywhere 12-25 >> ID: SYSTEM UWI: ABC Oil 12-25
- EOG 100-14-25-1-28 WPM >> ID: SYSTEM UWI: 100142500128W100
- EOG 102-11-25-1-28 WPM >> ID: SYSTEM UWI: 102112500128W100
- EOG 102-14-25-1-28 WPM >> ID: SYSTEM UWI: 102142500128W100
- EOG 103-11-25-1-28 WPM >> ID: SYSTEM UWI: 103112500128W100
- EOG 103-14-25-1-28 WPM >> ID: SYSTEM UWI: 103142500128W100**
- Tutorial Well >> ID: SYSTEM UWI: 100143206323W500

Bore Hole Long/Lat (Surface Location)

Lat: Degree: 49 Minutes: 4 Seconds: 11.674

Long: 101 7 2.957 ☒ DMS Format

DLS ☒ Enable

Meters North of South Boundary: 1215.21

Meters East of West Boundary: 1489.43

Road Allowance: 30.18

Section: 26

Township: 1

Range: 28

Meridian: 1

NTS ☐ Enable

Series: 100 Corner: SE

Area: a NS: 0

Sheet: 1 EW: 0

Block: a

Unit: 1

1/4Unit: A

* Surface Hole Location

Cancel OK

- 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. If the well has data from a previous entry **click** on the  **Button**. If not then you will want to fill in the DMS for the surface hole locations longitude and Latitude and then **click** on the  **button** to activate the survey set to the original view.
- 3) Repeat Steps 1 – 2 to add more survey plots to your original plot.

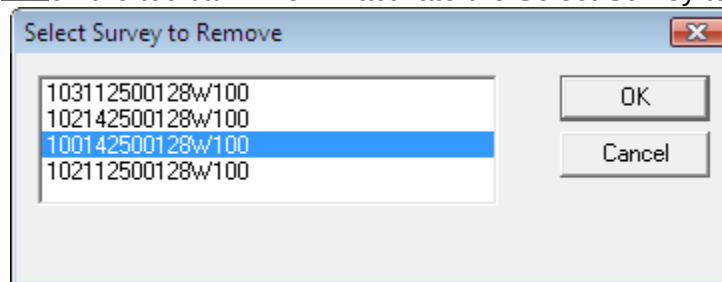
Edit Menu – Remove Survey plots



The User can also remove survey plots that were previously added.

How to remove survey plots from an existing plot.

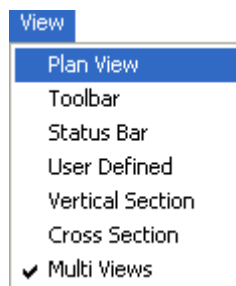
- 1) **Click** on the **Edit menu** and select the **Remove Survey** selection from the pull down menu or **Click** on the  on the toolbar. This will activate the Select Survey to plot window.



- 2) **Click** on the **Wells UWI** to highlight the survey set and then **click** on the  **Button**.
- 3) Repeat Steps 1 – 2 to remove more survey plots from your original plot.

View Menu

Plan view (isolated)



1. **Click** on the **Plan 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.
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

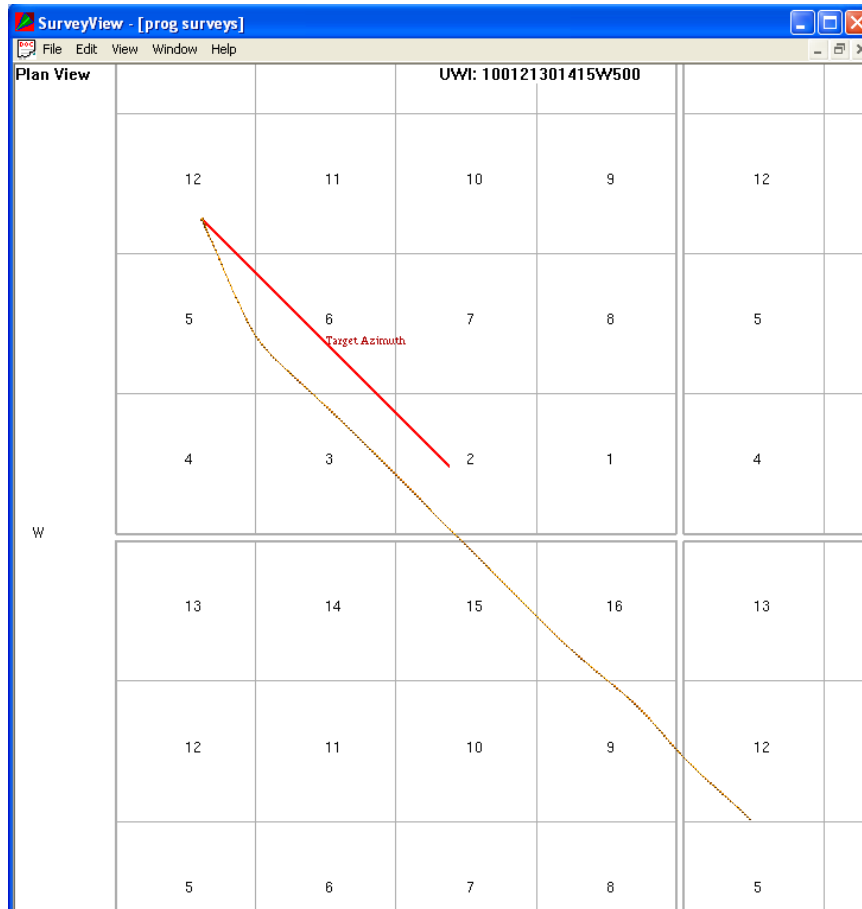
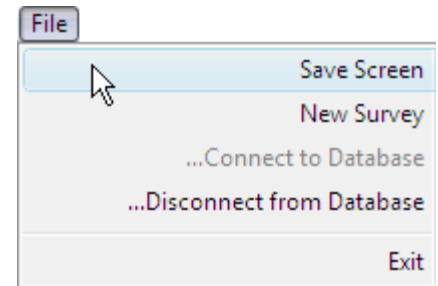
right click on the **image** and **select properties** this would activate the properties window where the user can change what is shown on the view but will be applicable to all views.

- Once the view is set up the way you want you can save this by **Clicking** on the



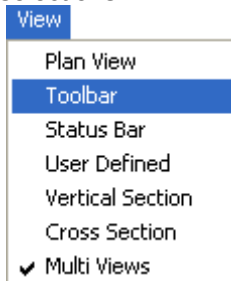
Icon on

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.



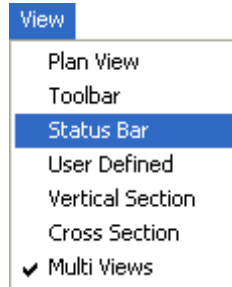
Toolbar Selection

- 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

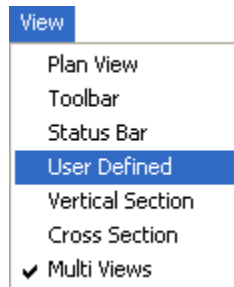


Status Bar Selection

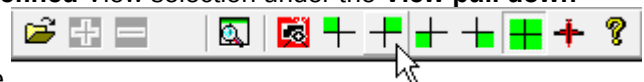
2. Click on the **Status Bar** selection under the **View pull down menu** to turn on or off the Status bar. The Status bar is located on the bottom of the Survey View window.



User defined view (isolated)



1. Click on the **User Defined View** selection under the **View pull down**



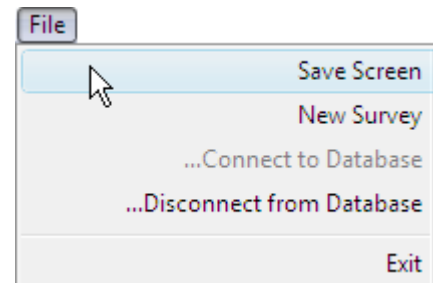
menu or click on the icon on the toolbar. This will Isolate the User Defined view and make it bigger.

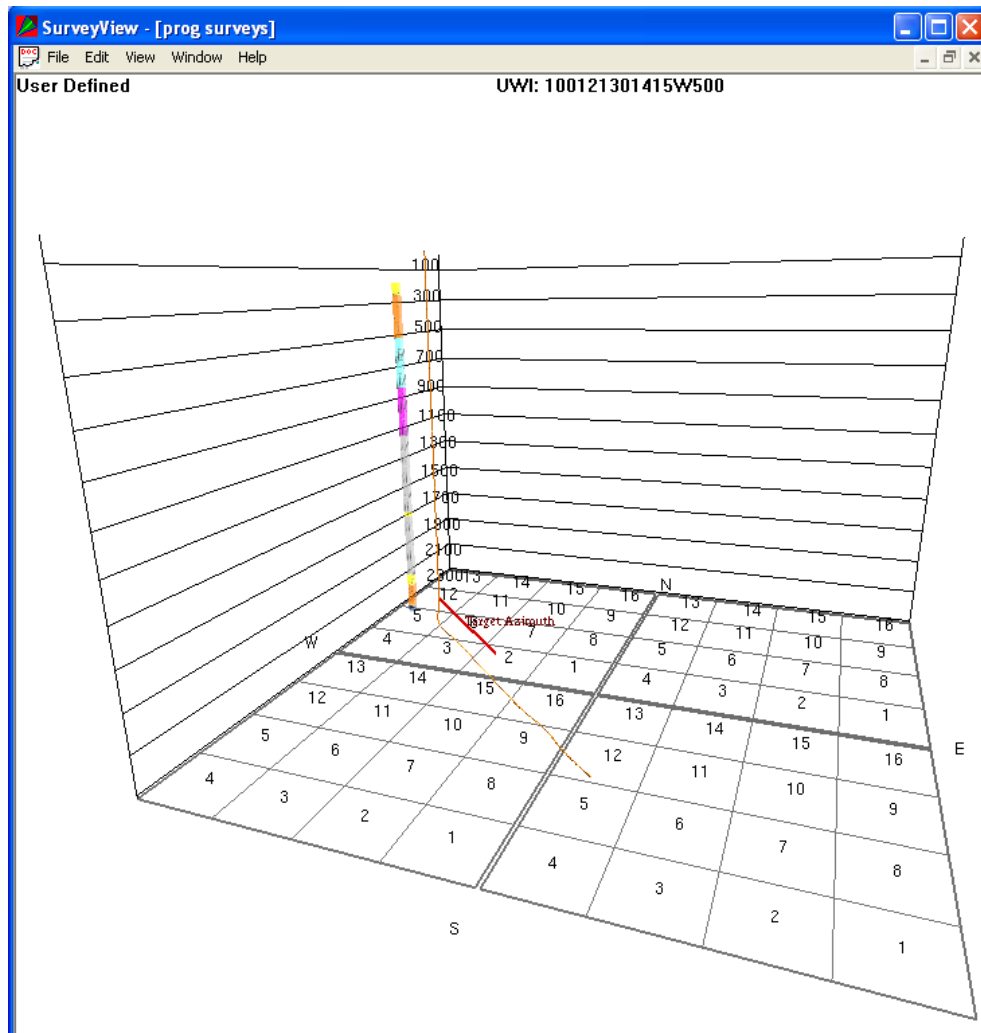
2. The user can then use the **scroll button** on the mouse to **zoom in or out** of the image (up scroll to zoom out and down scroll to zoom in). The user can also use the **up / down arrows** on the keypad to move the **image up or down**. The user can use their mouse to rotate the view by **clicking and dragging within the view** to rotate the view.

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 toolbar 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)

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**.

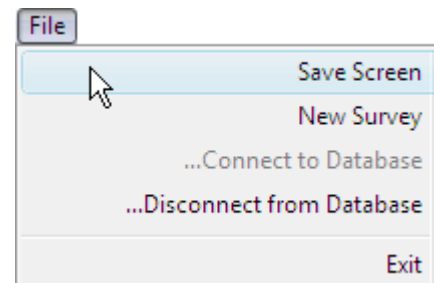
3. Click on the **properties** selection under the **Edit** pull down menu or **right click** on the **image** and **select properties** this would activate the properties window where the user can change what is shown on the view but will be applicable to all views.

4. Once the view is set up the way you want you can save this by **Clicking** on the

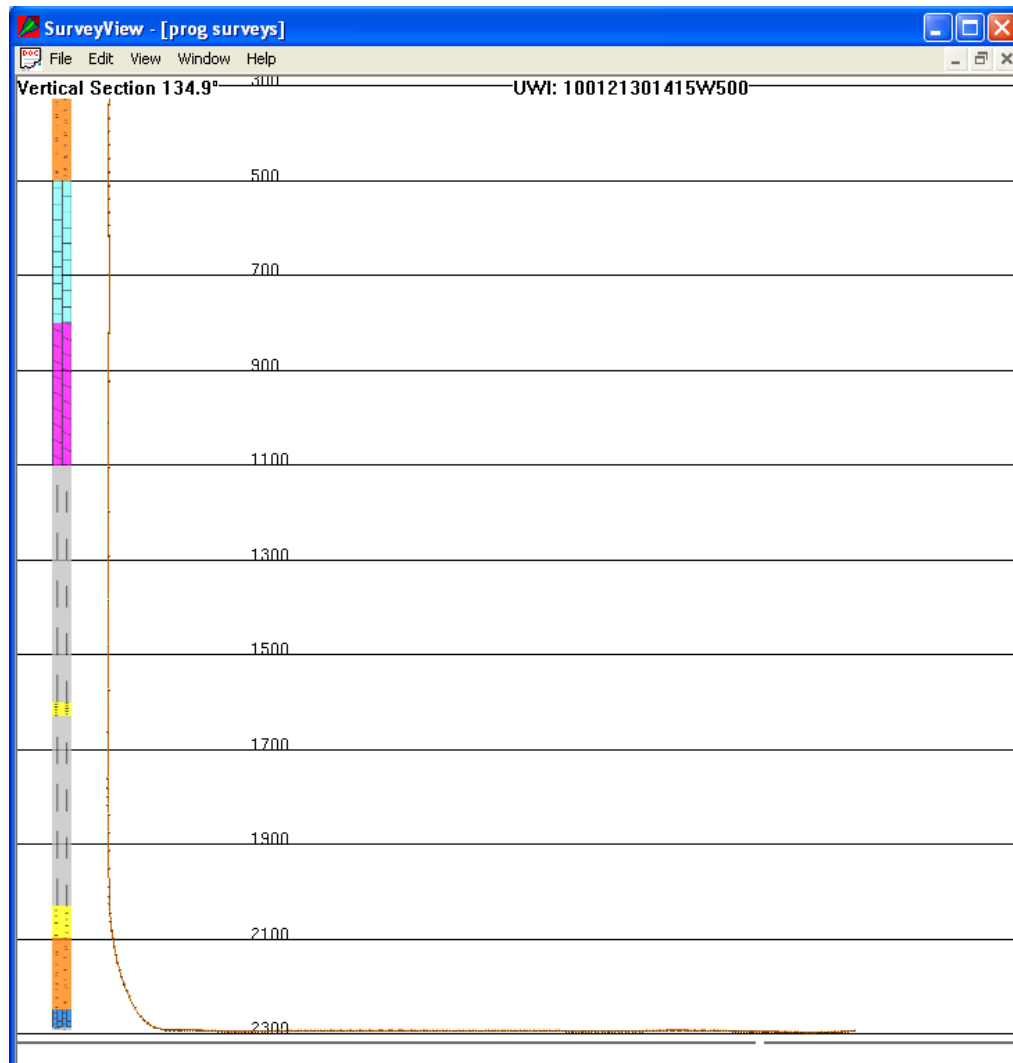


Icon

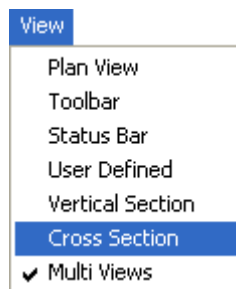
on the **tool bar** or the **Save Screen** Selection under the **File** pull down menu. This will save the screen capture



and give you the ability to print it out on your striplog in all of our applications.



Cross Section view (isolated)



1. Click on the **Cross 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 at right angles to 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**. In the User defined view the arrows do not apply but the user can use their mouse to rotate the view by **clicking and dragging within the view** to rotate the view.

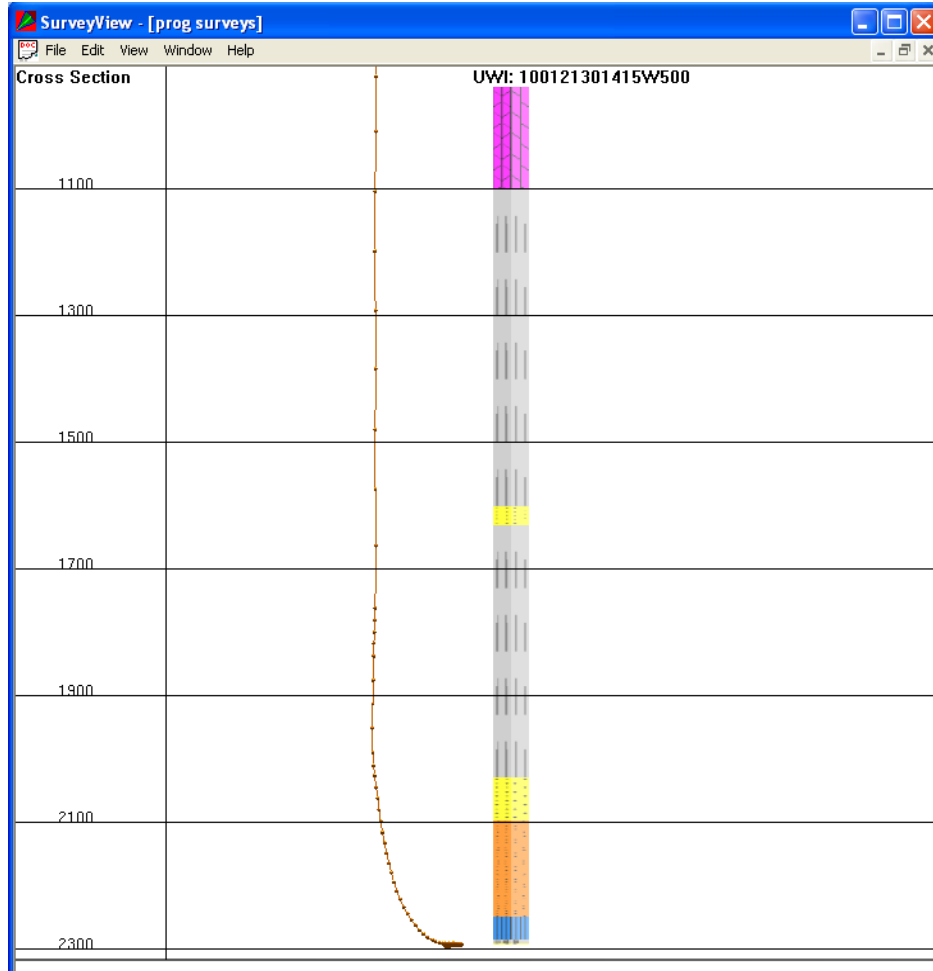
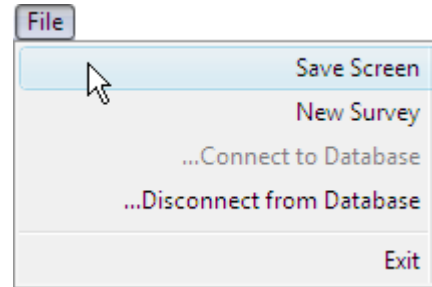
3. Click on the **properties** selection under the **Edit pull down menu** or **right click** on the **image** and **select properties** this would activate the properties window where the user can change what is shown on the view but will be applicable to all views.

4. Once the view is set up the way you want you can save this by **Clicking** on the

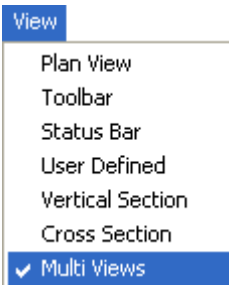


Icon

on the **tool bar** or the **Save 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.



Multi Views



1. Click on the **Multi Views** selection under the **View pull down menu** or click



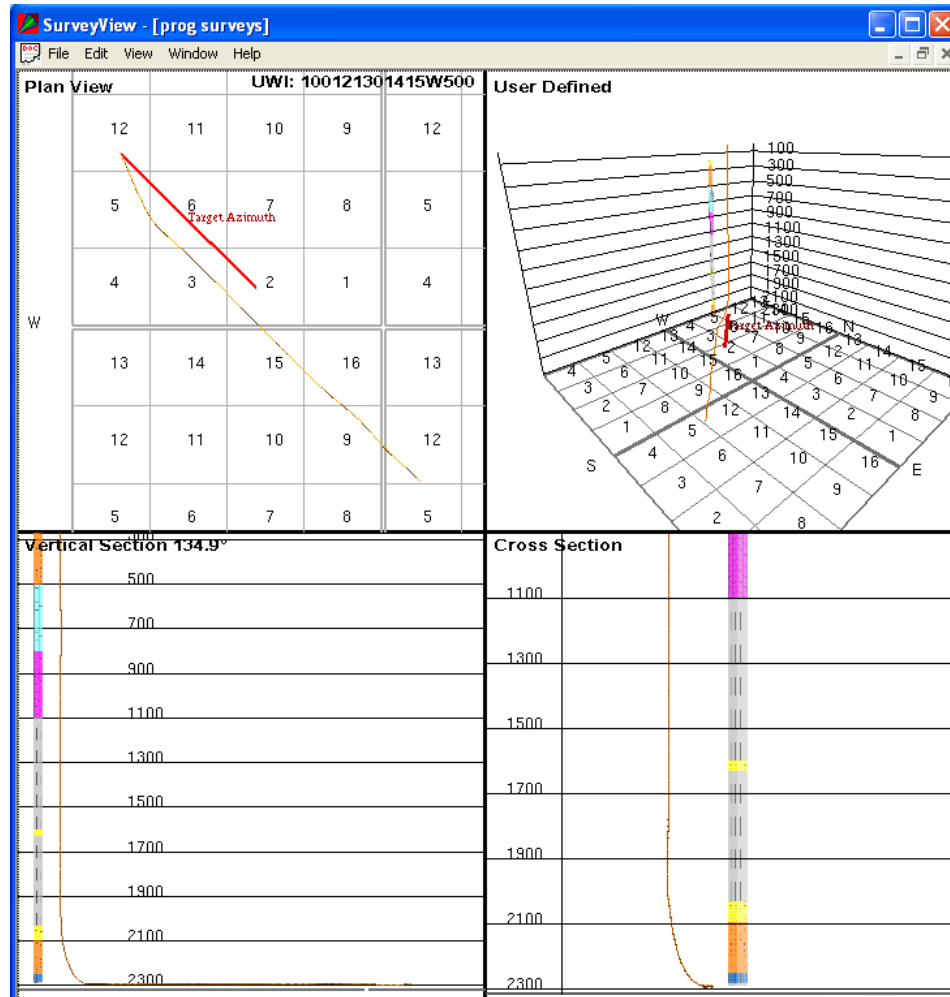
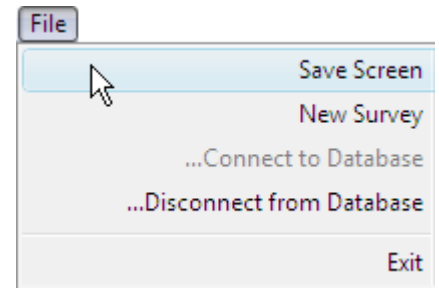
on the **tool bar**. This will Isolate the plan view and make it bigger. This view is a display of the well bore at right angles to the Vertical Section indicated in the Survey window for the Master Survey group.

2. The user must first click on the view he wishes to modify. In 3 of the 4 (except for User Defined) views 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 views are 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.



Window Menu

New Window

Use this command to start a new Auto Import Log.

The user must **click** on **New** located under the **Windows** menu selection on the main window to arrange multiple log history windows in a cascading manner.

Cascade

Use this command to arrange multiple opened windows in a non-overlapping, top to bottom fashion.

The user must **click** on **Cascade** located under the **Windows** menu selection on the main window to arrange multiple log history windows in a cascading manner.

Tile

Use this command to arrange multiple opened windows in a non-overlapping, side-by-side fashion.

The user must **click** on **Tile** located under the **Windows** menu selection on the main window to arrange multiple log history windows in a tiled manner.

Arrange Icons

Use this command to arrange icons.

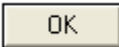
The user must **click** on **Arrange Icons** located under the **Windows** menu selection on the main window to arrange your icons.

Help Menu

About Survey View

1. The user must **click** on **About Survey View** located under the **Help** menu selection on the main window to activate the About window.



2. Click on the  button to exit this window.

Edit Menu – Well Selection

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.

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

Well

Save Undo New Del First Prev ? Next Last Storage Units: Metric Original Units: Metric

UWI: ABC Oil 12-25

Well Name: ABC Oil Anywhere 12-25

Operator: ABC Oil Resources Ltd.

Drilling Contractor: Total Deepness 35

County:

Province/State: Alberta

Country: Canada

Surf. Location: 10-25-45-12 W4M

Btm. Location: 12-25-45-12 W4M

Licensee: ABC Oil Resources Ltd. License #: 12424

Pool: Lamba C Pool Field: Anywhere

Rig #:

Elevations:

Reference: Ground Ground / Collar: 21.1

KB: 24.9 Casing Flange: 21.08

Surface Coordinates

Latitude: 0.12148 N/S: 324.23 meters North of the South boundary Of Sec. 23-45-12 W4

Longitude: 10.0577 E/W: 310.12 meters East of the West boundary Of Sec. 23-45-12 W4M

Intermediate Casing Point Coordinates

Latitude: 0.12149 N/S: 84.24 meters North of original Surface Location.

Longitude: 10.05775 E/W: 80.34 meters West of original Surface Location.

Bottom hole Coordinates

Latitude: 0.12151 N/S: 710.5 meters North of original Surface Location.

Longitude: 10.0578 E/W: 262.04 meters West of original Surface Location.

UTM Surface Coordinates

Northing: 23452.23 Easting: 3124545.21

Hole Direction: Horizontal ☐ Faulted ☒ Deviated Hole ID: 12-25-45-12 W4M

Depths:

Drillers T.D. (Tally) MD	Drillers T.D. (Tally) TVD (Strap) MD	Drillers T.D. (Tally) TVD (Strap) MD	Loggers T.D. MD	Loggers T.D. TVD
1037	395.83	1037	395.83	991
KB to Ground	Cut	Fill	Plugback	Sidetrack
3.8	1.5	1	300	305

Water Depth Reference: Mean Water Depth: 12.5

Date	Time	Work Schedule
Spud:	Feb 25, 2001 22:15	Curves
T.D.:	Mar 7, 2001 06:15	Mud Types
Rig Release:	Mar 10, 2001 12:00	Dir. Surveys
Well Status:	Potential Lower Septon 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 **Save** 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 **Save** 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.

Field Restriction Table:

Bottom Hole Latitude	60	Character	Optional
Bottom Hole Longitude	60	Character	Optional
Bottom Hole EW	100	Character	Optional
Bottom Hole NS	100	Character	Optional
Intermediate Casing EW	100	Character	Optional
Intermediate Casing NS	100	Character	Optional
Intermediate Casing Latitude	60	Character	Optional
Intermediate Casing Longitude	60	Character	Optional

Casing Flange Elevation	5.5	Numeric	Optional
Country	50	Character	Optional
County	50	Character	Optional
Cut	5.5	Numeric	Optional
Driller's TD (Strap) MD	5.5	Numeric	Optional
Driller's TD (Strap) TVD	5.5	Numeric	Optional
Driller's TD (Tally) MD	5.5	Numeric	Optional
Driller's TD (Tally) TVD	5.5	Numeric	Optional
Drilling Contractor	50	Character	Optional
Field (Assigned Field)	50	Character	Optional
Fill	5.5	Numeric	Optional
Ground Elevation	5.5	Numeric	Optional
Hole Direction	12	Character	Optional
Hole ID	15	Character	Optional
KB Elevation	5.5	Numeric	Optional
KB to Ground	5.5	Numeric	Optional
Licensee	50	Character	Optional
Surface Hole Location	50	Character	Optional
Bottom Hole Location	50	Character	Optional
Logger's TD MD	5.5	Numeric	Optional
Logger's TD TVD	5.5	Numeric	Optional
Operator	50	Character	Optional
Plugback Depth	5.5	Numeric	Optional
Province/State	50	Character	Optional
Reference Elevation	12	Character	Optional
Rig Release Date	DATE FORMAT_24:00		Optional
Spud Date	DATE FORMAT_24:00		Optional
Storage Units	12	Character	Mandatory
Surface EW	100	Character	Optional
Surface NS	100	Character	Optional
Surface Latitude	60	Character	Optional
Surface Longitude	60	Character	Optional
T.D. Date	DATE FORMAT_24:00		Optional
UTM East Coordinates	11.2	Numeric	Optional
UTM North Coordinates	11.2	Numeric	Optional
UWI	20	Character	Mandatory
Water Depth	5.5	Numeric	Optional
Water Depth Reference	4	Character	Optional
Well Abstract	40000	Character	Optional
Well Name	50	Character	Mandatory
SideTrack Depth	5.5	Numeric	Optional
Well Status	100	Character	Optional

View Menu – Depth View Mode

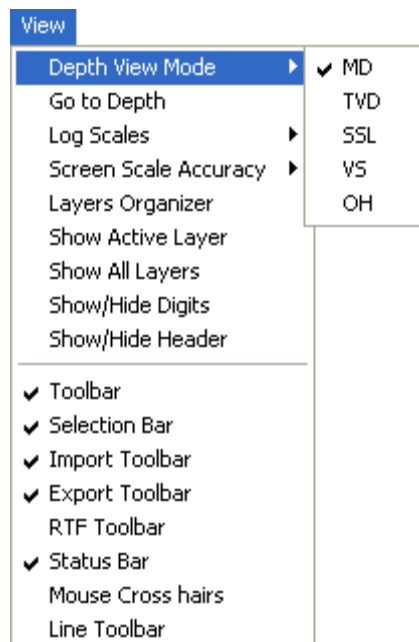
Depth View Mode

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

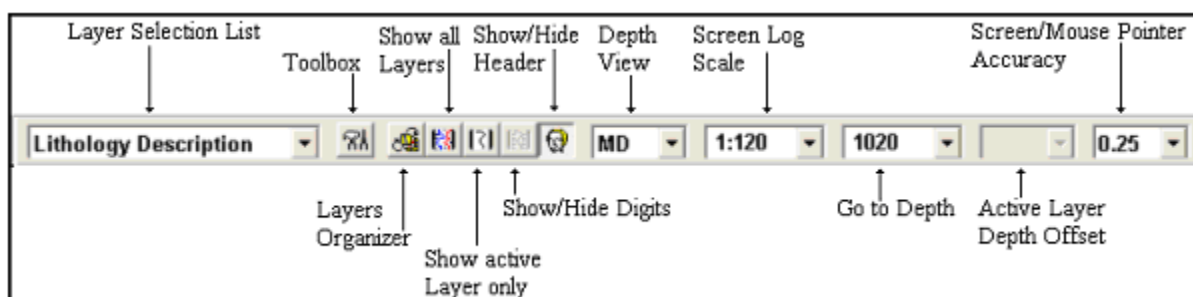
1. Click on **Depth View Mode**, under the **View** menu selection to activate the pop out menu and then click on the desired depth view to display the active log in **MD (Measured Depth)**, **TVD (True**

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.



Note: 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.

Procedure 2



1. **Click** on the down arrow on the **MD** in Power*Log/Core and **MD** in Power*Curve **Depth View mode selection** on the Selection Bar and select the desired depth view for your Log.

Note: 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.

Reports Menu – 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 between the top and bottom of the cored interval.

Note: The **Core Report** will not print out, until you have completed at least **one (1) Core Description** that falls between the **Core's Interval** (To) and **Interval** (From) depth values.

The screenshot shows the 'Well Core' window with the following fields and values:

- Buttons: Save, Undo, New, Del, First, Prev, ?, Next, Last
- Core #: 1
- Coring Date: Mar 7, 2001
- Interval: 1000 to 1012
- Length: 12.00
- Recovered: 11.2
- Core Diameter: 159
- Hole Size: 200
- Formations Cored: Wilrich, Bluesky
- Coring Company: Anywhere Coring Company
- Service Reps: Joe Blow Consultant
- Bit Used section:
 - Make: BHI
 - Type: C201
 - Serial #: 129R54
 - Size: 199
- Color selection: A brown color swatch with the text 'Color left click to change'.
- Remarks:
 - Coring Times: 12, 13, 23, 12, 2, 3, 3, 12, 13, 3, 5, 23 min/m.
 - Core appears to be jamming on the last meter. Core was pulled due to that fact.
- Core Descriptions button at the bottom right.

Note: 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

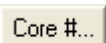
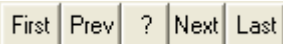
1. Click on **Core** under the **Reports** menu selection.

- 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.
- The Cored interval is displayed on the log in the Core layer. The default cored interval is black. **If the user wishes to change the color left click the color swatch and pick a new color.**

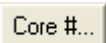
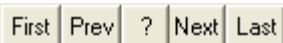
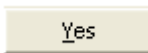
N.B. The default Core interval color will now be that color. Each record has its own color so if you are editing the color for one you will have to edit the color for all exiting records.

- 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

- Click on the  button to view a list of **Cores** to date and then **double click** on the record that you wish to edit.
- Or, use the database navigational tools  to navigate through the records. See the **Database Navigational Tools** section later in this **User Manual** for more information.
- Once the selected interval is displayed in the **Well Core** window, make any changes you feel are necessary. 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 Core

- Click on the  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.**
- Or, 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 **Well Core** window. Then, click on the  **Delete button.**
- The user will be prompted with a confirmation "Do you really want to delete?" Click on the  **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

Reports Menu – 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.

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 **Survey Points** 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

1. Click on **Survey Prognosis** under the **Reports** menu selection.
2. Click on the **New** button or press **ALT-N**.
3. Type in a Survey group ID in the Survey Group field. In the example above we have used **Prog** and then click on 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 it 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.

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 **New** button or press **ALT-N**.
3. **Enter any appropriate information** into the empty fields.

Note: 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

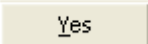
1. **Click** on the **Measured Depth...** button to view a list of **Directional Survey Points** to date and then **double click** on the record that you wish to edit.
2. Or, use the database navigational tools **First Prev ? Next Last** to navigate through the records. See the **Database Navigational 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

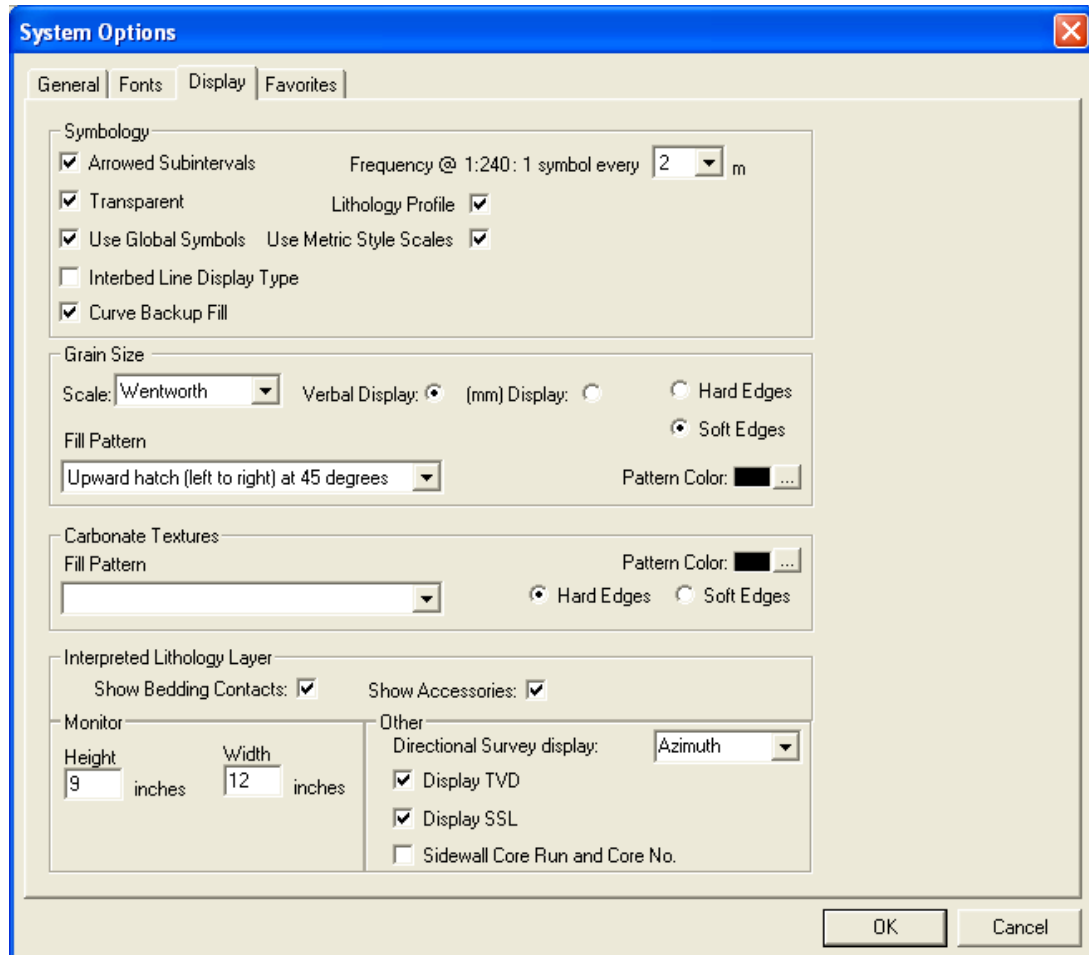
1. **Click** on the **Measured Depth...** button to view a list of **Directional Survey Points** to date and then **double click** on the record that you wish to delete.
2. Or, use the database navigational tools **First Prev ? Next Last** to navigate through the records. See the **Database Navigational 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,

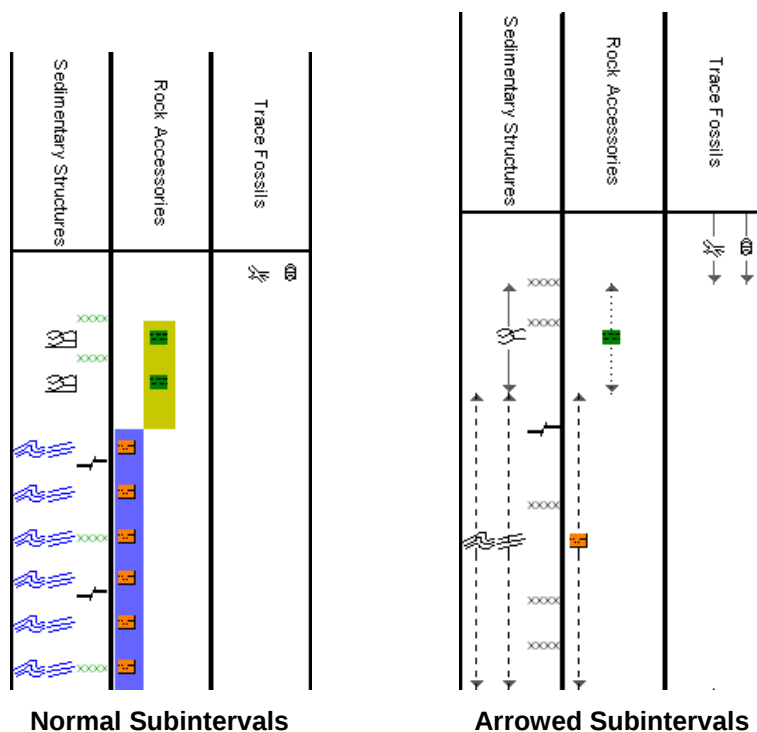
click on the  **Delete button**.

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

Display Tab



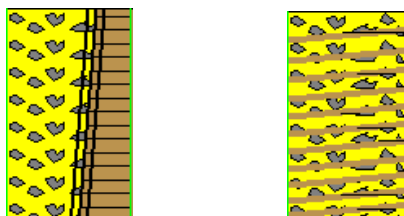
Arrowed Subintervals - This check box  when activated will indicate the top and bottom of your subintervals (portion of an interval) with an arrow rather than a set of symbols. An example is shown below.



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 ☒ when activated will display the interbed data with a line display splitting the two lithology types or when unchecked will display the lithology in an interbed fashion as displayed below.

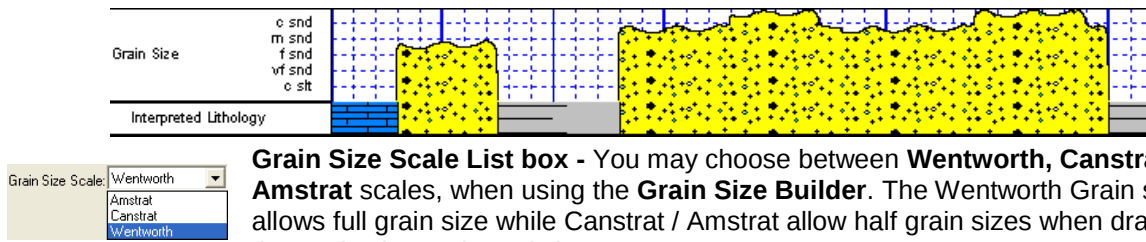


Curve Backup fill – This check box ☒ when activated will show a sideways hatching fill pattern when a curve goes off scale or in the backup mode. If unchecked there will be no hatching pattern when the curve goes off scale.

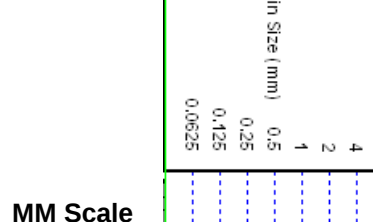
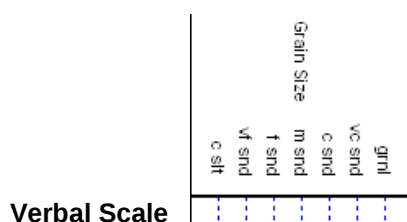
Frequency @ 1:240 – This drop box determines how often symbols are drawn on a **Lithology Layer**, with the scale of 1:240. For example: 1 symbol every 1 meter at 1:240, 2 symbols every 1 meter at 1:120, 1 symbol every 2 meters at 1:480, and so on. These frequencies are only in effect if you utilize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

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

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

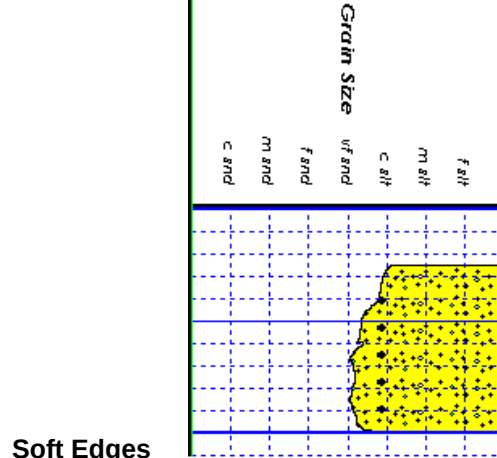
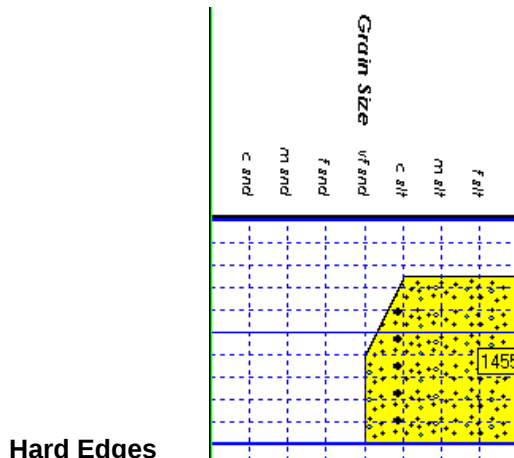


Verbal Display: This radio button will display the **Grain Size Track header** with the equivalent verbal grain sizes such as C slt, VF snd, F snd, M snd, C snd etc.



(mm) Display: This 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.

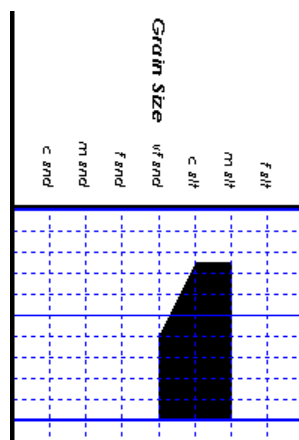
Hard Edges This radio button will display the grain size with strait edges and right angles between the grain sizes. The illustration below is shown with Lithology Profile activated.



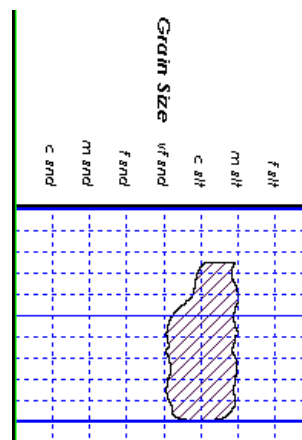
Soft Edges This radio button will display the grain size with curved edges and rounded angles between the grain sizes.

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: ☒ -When this check box ☒ 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 vertical viewing area of your monitor in inches and then insert that value in the **Monitor Height** field. Be aware, however, that if you adjust the screen height knob on your monitor, this will affect the monitor height setting.

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

Note: You must restart **Power*Log / Core & Curve** for the **Monitor Width / Height** changes to take effect.

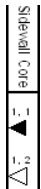
Directional Survey display: **Azimuth** **Azimuth** **Quadrant**

This drop box option will display your directional surveys on your log in either Quadrant format N 62 ° W) or Azimuth format (AZ 298 °)

Display TVD This check box ☒ when activated will display the True Vertical depths for the survey points.

Display SSL This check box ☒ when activated will display the Subsea level depths for the survey points.

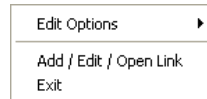
☒ Sidewall Core Run and Core No. This check box ☒ when activated will display the Sidewall Core Run & Core numbers above the core triangle indicator on the Sidewall Core layer.



Log Layers

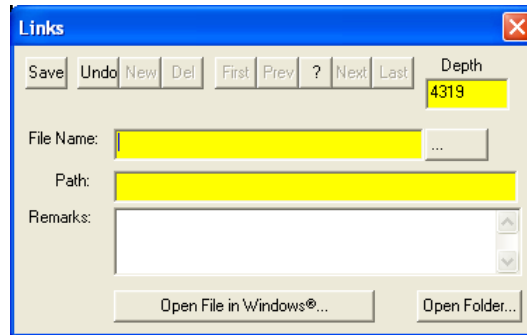
All Log layers - Link Layer

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.

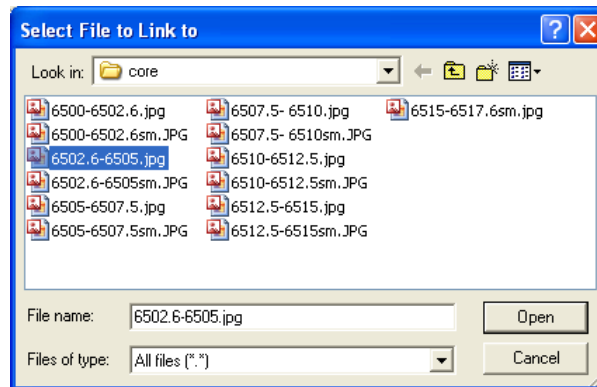


How to Add a Link to any Layer

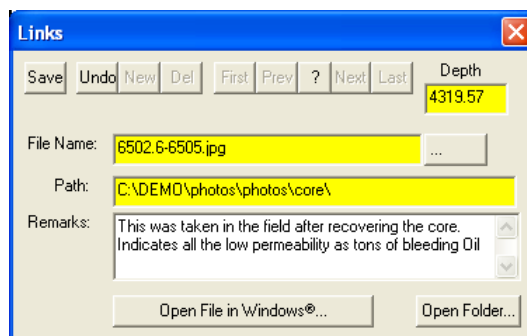
1. **Right Click** on any layer and you will get (at a minimum) this pop out menu options. If the builder was open you would probably get more options.
2. **Select Add / Edit / Open Link** and if no Link exists you will get an Empty Links Window as shown below with the Depth field filled in with the depth you right clicked at.



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



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.

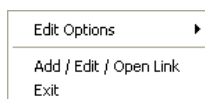


5. **Type** in any **Remarks** in the Remarks field that you want to explain the link and then **Click** on the **Save** button or press **ALT-S** and then **click** on the appropriate button out of the ensuing **Shortcut Options** window. You will now see a paperclip symbol on the layer.

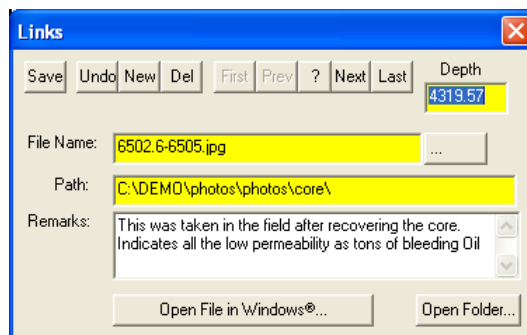
N.B. If the well is then Exported (Data Transfer Module) creating an *.exp file and then Imported (Data Transfer Module) the data files and links imbedded into the Original Log are then redirected and inserted into the install folder for Power*Suite. The default install folder structure would be C:\PowerSuite_V12\Linked_Files with the original name of that file.

How to Edit a Link to any Layer

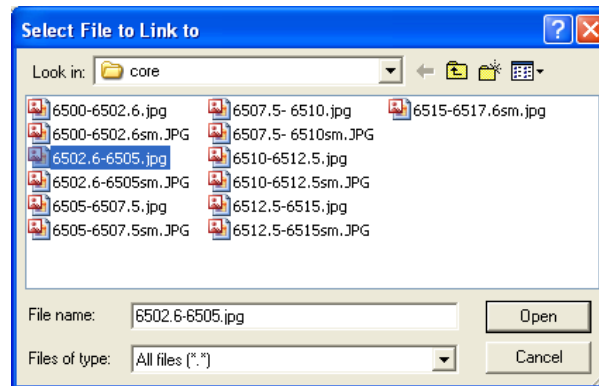
1. **Right Click** on any track / layer where you see a paperclip symbol and you will get (at a minimum) this pop out menu options.



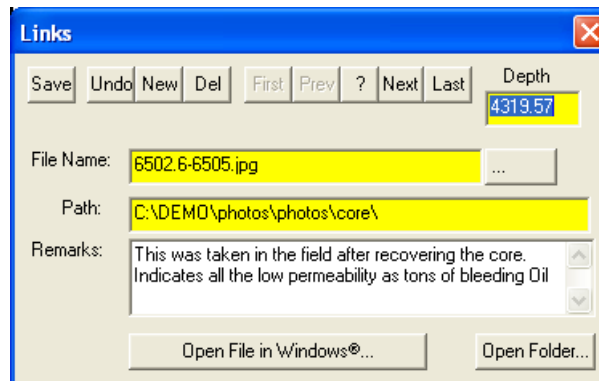
2. **Select Add / Edit / Open Link** and if a Link exists you will get a Links Window as shown below with the fields filled in.



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



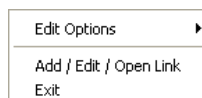
4. Navigate to the file you wish to link to your log and **Highlight the file name** and then **click** on the **Open** button. This will fill in the Links window with the file name and path portion of the Links window as shown below.



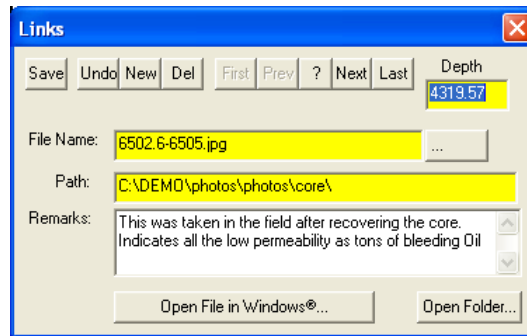
5. **Change** the **Remarks** in the Remarks field that you want to explain the link and then **Click** on the **Save** button or press **ALT-S** and then **click** on the appropriate button out of the ensuing **Shortcut Options** window.

How to Delete a Link to any Layer

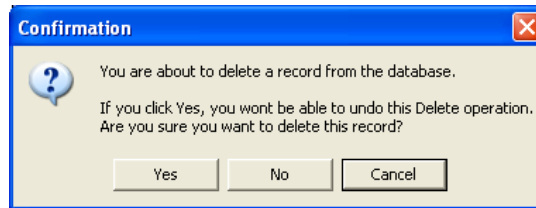
1. **Right Click** on any track / layer where you see a paperclip symbol and you will get (at a minimum) this pop out menu options.

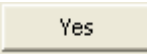


2. **Select Add / Edit / Open Link** and if a Link exists you will get a Links Window as shown below with the fields filled in.



3. Click on the  button. This will activate a Confirmation Message window.



4. Click on the  button.

Bit Record Layer

This layer allows you to display some of the Bit Record information on the log.

Adding Bit Record Data

1. **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.
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 out of the ensuing **Shortcut Options** window.

Note: The **Bit In** information consists of Bit #, Make, and Type NB#6 WRB HR-S35, while the **Bit Out** information consists of Bit #, Make, Type, Meters Drilled, Rotating Hours, and either Bit Grading

Bit#6 WRB HR-S35
237.00 / 32 hrs
Cond 6-6-WT-A-
-F-16-RG-TG

Systems This information is displayed on the Bit Record Layer

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.

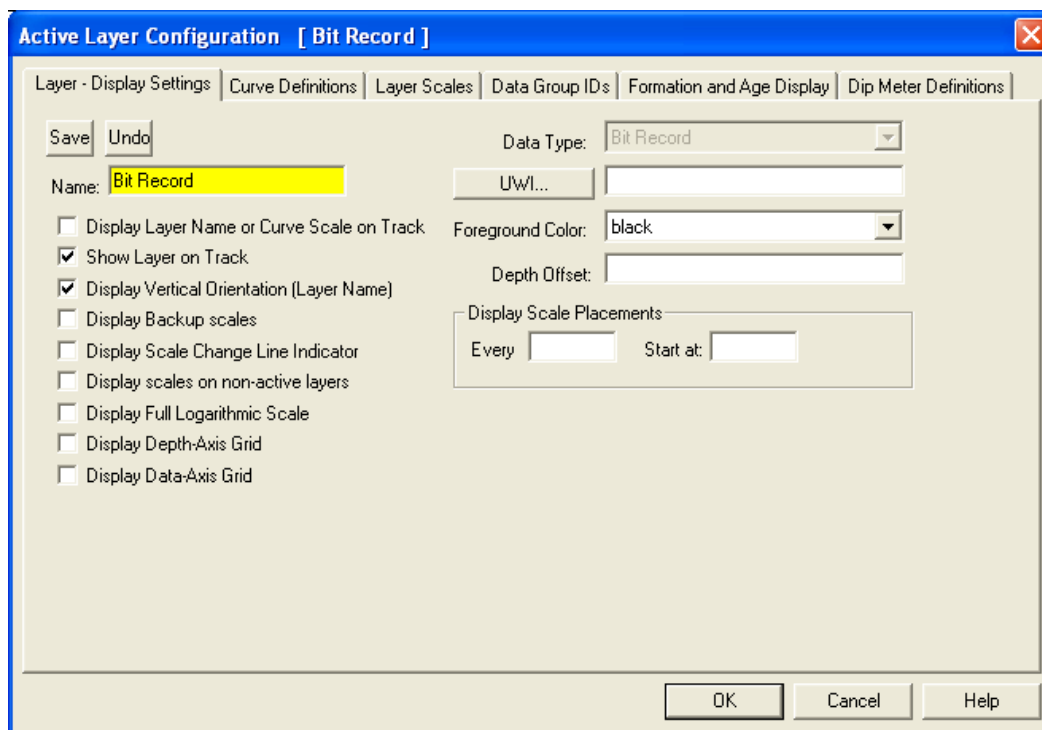
In Alignment Option – **Right click** on the **Bit Record layer** at the **In depth** of the bit record to change to activate the pop out menu seen above and **select In Alignment** to activate a pop out menu and select left / right /centre and the display will change accordingly.

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

Note: 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  **Layer Configuration** button on the **Toolbar**, when the **Bit Record Data** layer is active.



Casing Layer

This layer allows you to display some of the Casing String information on the log.

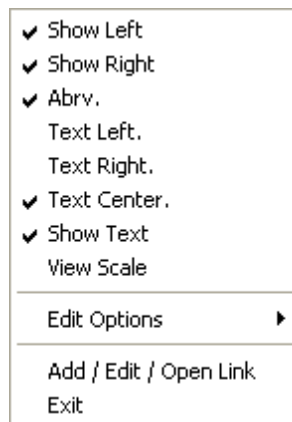
Adding Casing Data

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  **button** or **press ALT-S** and then **click** on the appropriate button out of the ensuing **Shortcut Options** window.

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

1. **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.
2. **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.

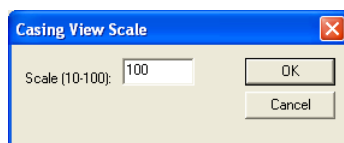
Abrv Option – **Right click** on the layer above the string landed depth with the builder open to activate the pop out menu seen above and **select Abrv** to toggle between long and short forms of the Casing Type.

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 necessity most of the time. The user must **Type** in a new scale in the scale field and then **click** on the  button.

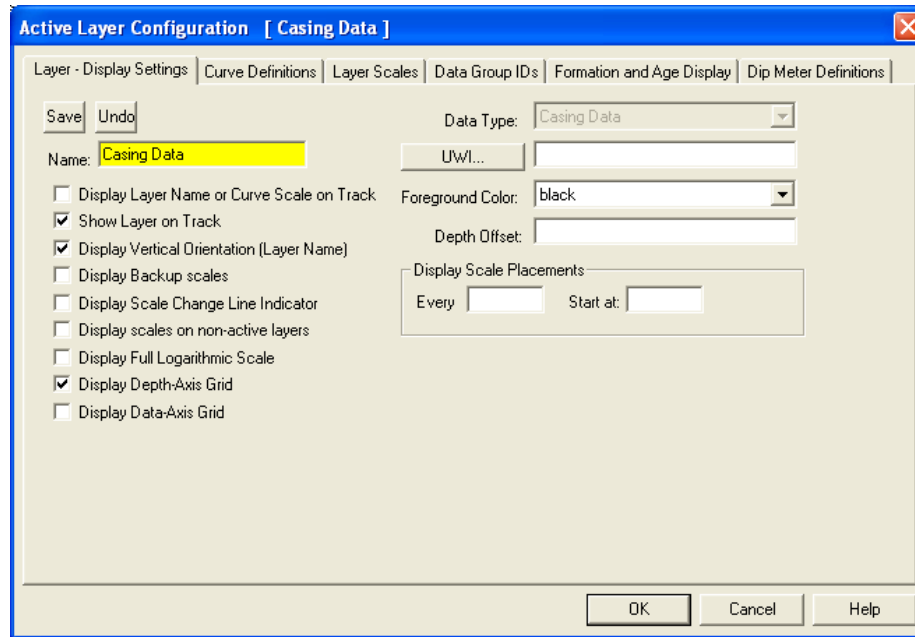


Moving the Casing Text Independently without the Right Click Options

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

Note: 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.

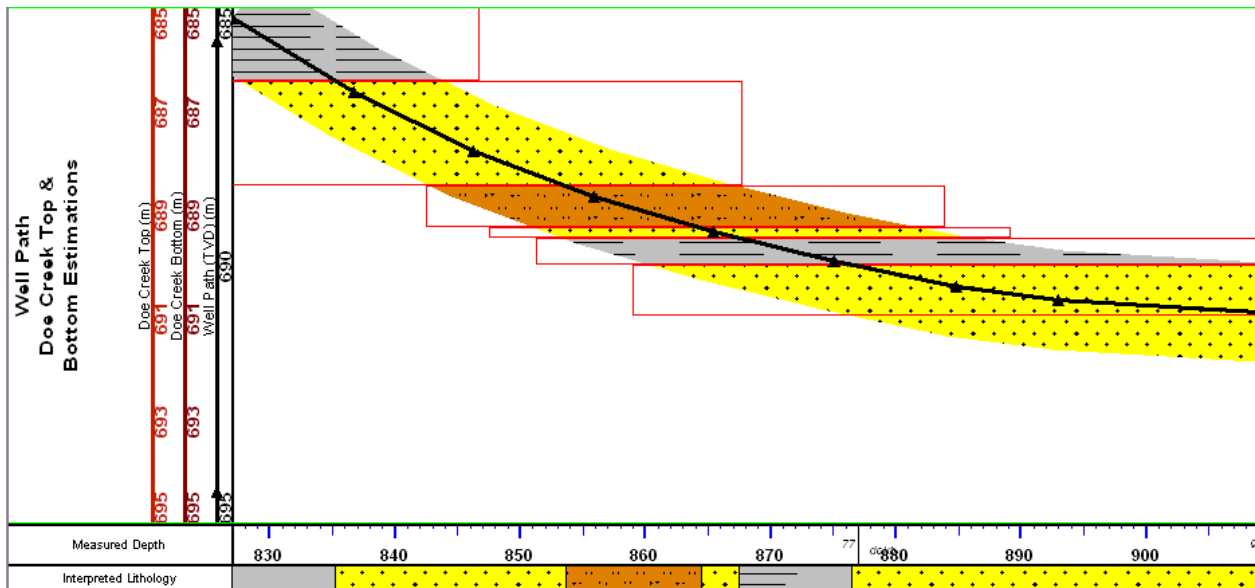
The only thing that can be modified is the Casing shoe symbol color which is handled by the foreground color on the Layer Display Setting tab.



- Click on the **Save** button to Exit and Save the Layer configuration settings.

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 extent of those beds past the areas previously drawn. An example is shown below.



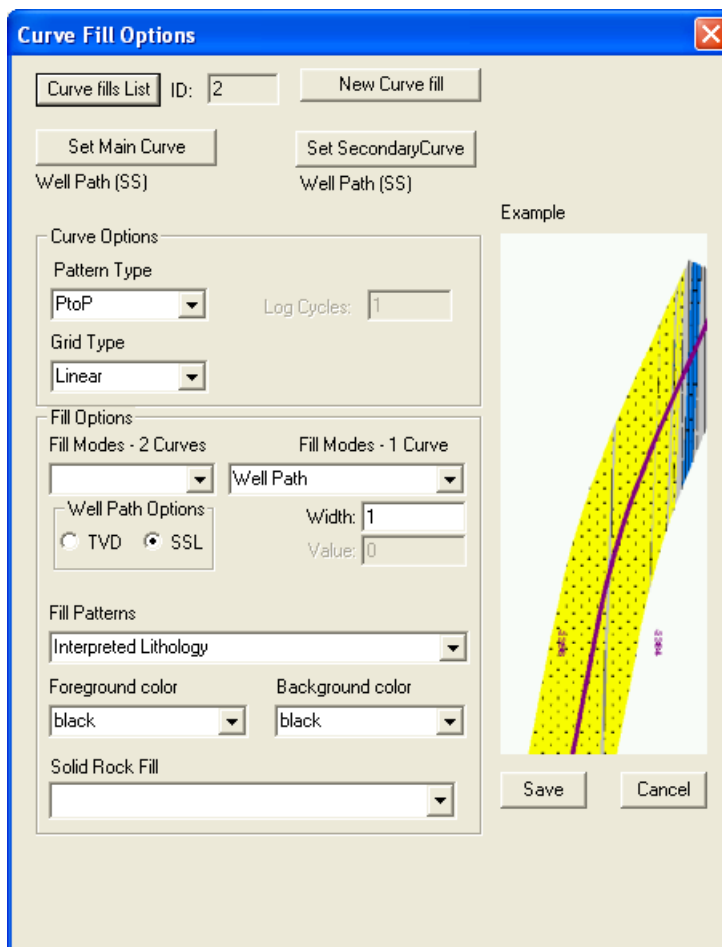
How to Set the Well Path Curve Fill options

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 **left** of the **Selection Bar**.

1. **Double click** anywhere within the **Curve Fill** or layer to activate the **Curve Fill Options** window.
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  **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).

- 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)

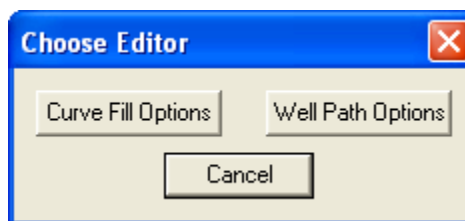
- Click on the **Fill Modes – 1 Curve** down arrow and select the **Well Path** from these options.
- Type in the **Width** field how wide (in inches) you want the fill to be surrounding the well path curve. Example: If (1) is type into the width field then the fill will be ½” either side of the curve.
- Select between the **TVD** and **SSL** scale options. This is applicable to which curve for well path you are filling.
- Click on the **Fill Patterns** down arrow and select **Interpretive Lithology**.
- 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 left of the **Selection Bar**.

Single Value Data Entry

- Double click anywhere within the **Curve Fill** or layer to activate the **Choose Editor** window.



- 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.

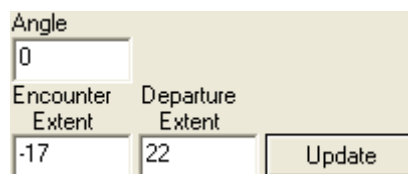
Rock Type	Rock Mo...	Bed Angle	Encounter...	Departure...	Encounter...	Departure...	Covered Range
ss		0	780	788	-10.00	10.00	770.00 - 798.00
sh	m gy	0	788	840	-10.00	10.00	778.00 - 850.00
sltst		0	840	860	-10.00	10.00	830.00 - 870.00
ss		0	860	863	-10.00	10.00	850.00 - 873.00
sh	m gy	0	863	877	-10.00	10.00	853.00 - 887.00
ss		0	877	915	-10.00	10.00	867.00 - 925.00

Mouse Pointer method

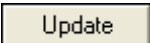
3. To modify a single bed the user can either **click on the bed within the layer**. The bed outline will change from red to blue when selected and will also be highlighted with a grey color in the builder.
4. **Hold the CTRL Key down** on the keypad and **click on the corner or end boundary of the bed**. This will result in an ↖ 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.

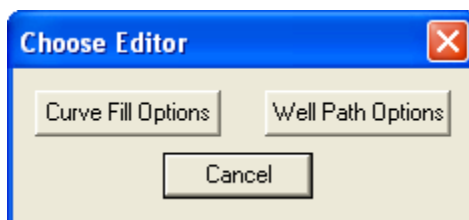


Angle	
0	
Encounter Extent	Departure Extent
-17	22
Update	

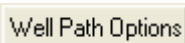
6. Here the user can change the **type** in a new bedding angle + or – to change the angle of dip as well as the extents with a (–) negative number in the Encounter Extent to further the bed to the left or a (+) positive number in the departure field to further the bed to the right.
7. **Click** on the  **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
Cancel	

2. **Click** on the  **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.

Bedding Contact Angles

Rock Type	Rock Mo...	Bed Angle	Encounter...	Departure...	Encounter...	Departure...	Covered Range
sltst		1	840	860	-30	30	810.00 - 890.00
ss		1	860	863	-30	30	830.00 - 893.00
sh	m gy	1	863	877	-30	30	833.00 - 907.00
ss		1	877	915	-30	30	847.00 - 945.00
Ss		1	1739.75	1839.5	-30	30	1709.75 - 1869.50
Ss		1	1839.5	1891	-30	30	1809.50 - 1921.00

Angle: 1

Encounter Extent: -30 Departure Extent: 30 **Update**

Change Range

From: 780 To: 815

Encounter Extent: -30 Departure Extent: 30 Angle: 0 **Apply** **Exit**

- 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.

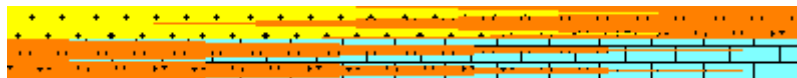
Change Range

From: 780 To: 915

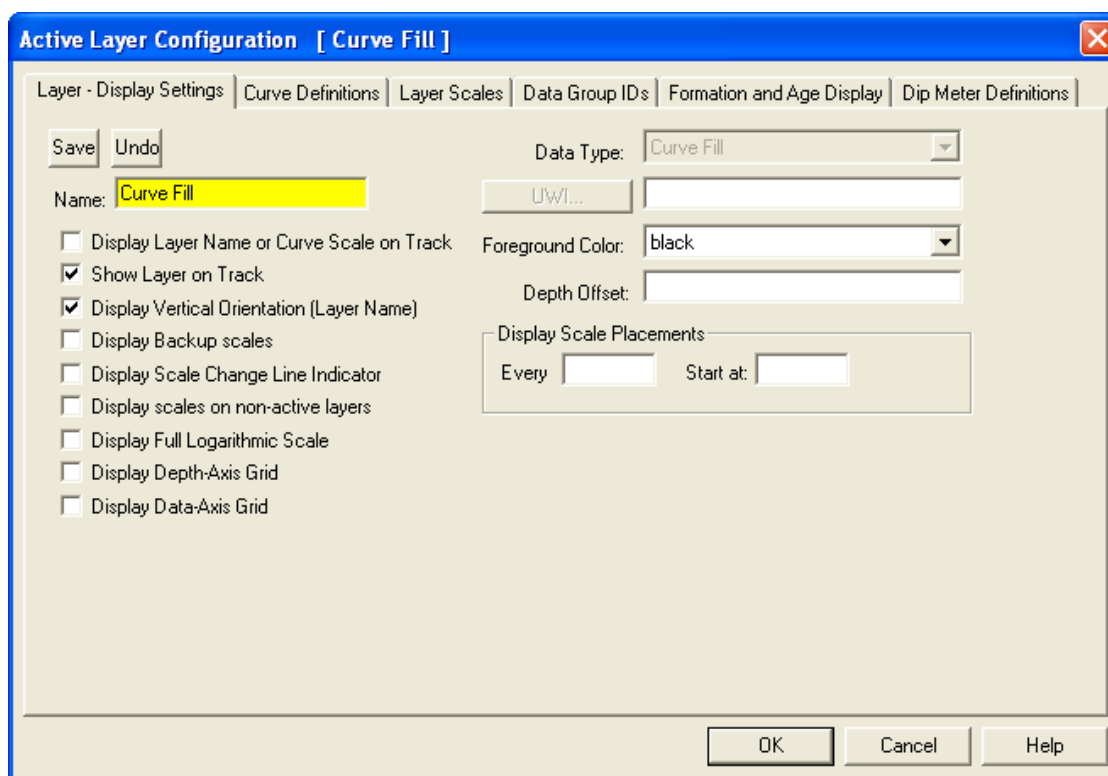
Encounter Extent: -30 Departure Extent: 30 Angle: 0 **Apply**

- 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.
- 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.



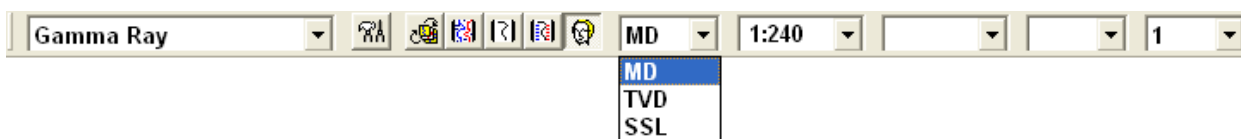
Depth Layer

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.

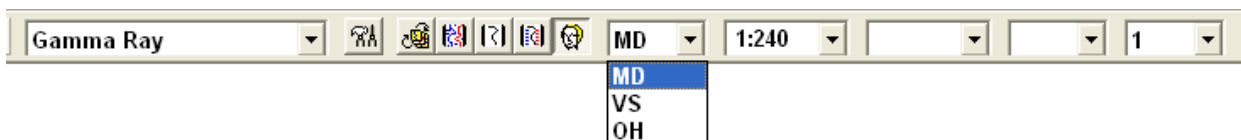
How to Change the Depth View on a log.

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

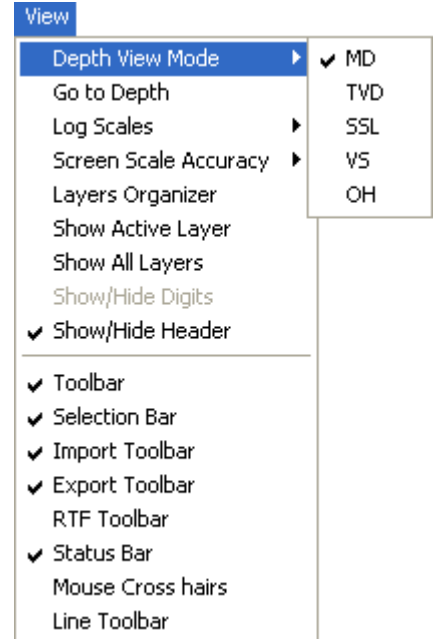


1. Click on the **down arrow** beside the **Depth View (MD)** and **Select** a different view mode. If the MD is not grayed out you will get **TVD** (true vertical depth) or **SSL** (sub sea level) as a choice in

Power*Log or Power*Core. In Power*Curve you will get **VS** (vertical section depth) or **OH** (open hole) as a choice.

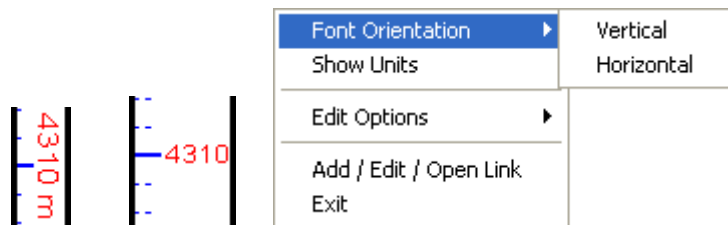
2. or Click on **Depth View Mode**, under the **View** menu selection to activate the pop out menu and then **click** on the desired depth view to display the active log in **MD, TVD or SSL** for Power*Log and Power*Core. In Power*Curve you will have the option to select from the desired depth view to 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.

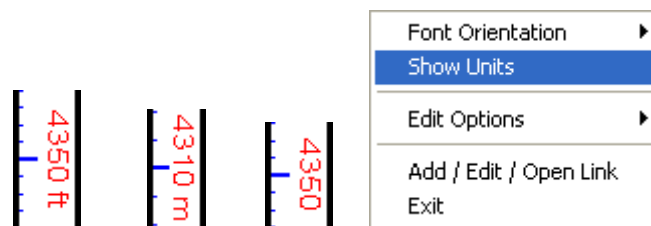
1. On the **Depth** layer, **right click** anywhere to activate the pop-up menu.



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**

Directional Survey Points Layer

This layer allows you to display some of the Directional Survey Point information on the log. 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 **New** 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.

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

1. **Double Click** on the **Directional Survey track / layer** to activate the Directional Survey Point data entry window
2. **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.

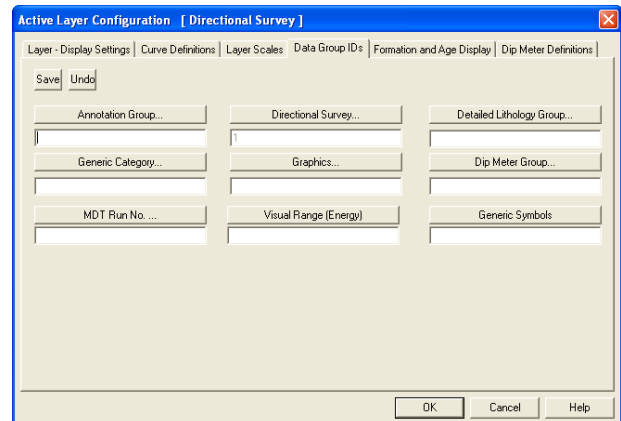
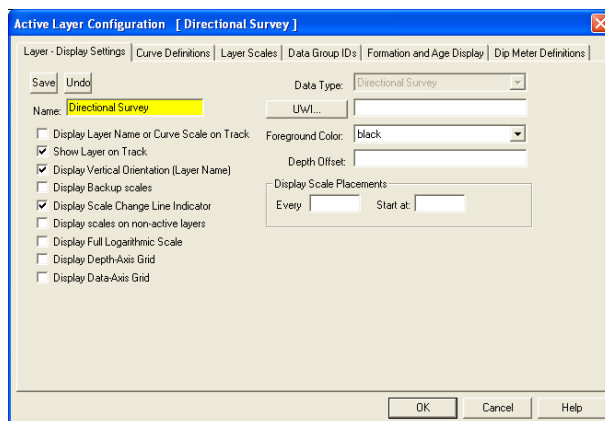
Show TVD Option - **Right click** on the **Directional Survey layer** at the **depth** of the directional survey to change to activate the pop out menu seen above and **select Show TVD** to toggle between showing the TVD Depth or not for all the surveys.

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 surveys.

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

Note: 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 **Layer Configuration** button on the **Toolbar**, when the **Directional Survey Data** layer is active.



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 **New** 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 out of the ensuing **Shortcut Options** window.

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 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.

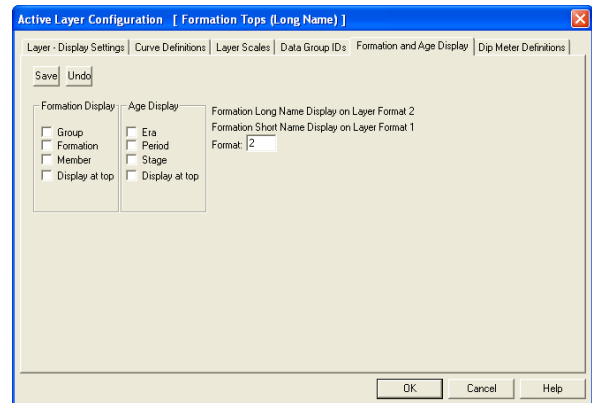
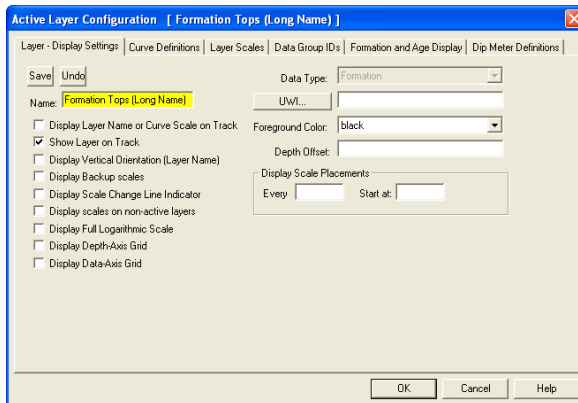
Align Right (All) Option – **Right click** on the **Formation Top (Long Name)** layer to activate the pop out menu seen above and **select Align Right (All)** to change the display positions of all the Formation Names on the layer to the right.

Centre (All) Option – **Right click** on the **Formation Top (Long Name)** layer to activate the pop out menu seen above and **select Centre (All)** 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

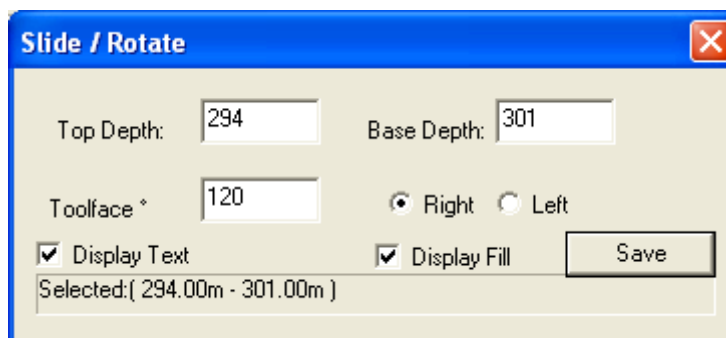
1. **Double Click** on the **Formation Top (Long Name)** track / layer to activate the Well Formation data entry window.
2. **Hold the CTRL key down on your keypad** and then move the mouse to the Formation text data you want to move and then **click and drag the information to a new spot** on the layer. 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.



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.



The 'Slide / Rotate' dialog box has a blue title bar with the text 'Slide / Rotate' and a close button (X) in the top right corner. The main area is light beige. It contains two input fields: 'Top Depth:' with the value '294' and 'Base Depth:' with the value '301'. Below these is a 'Toolface °' field with the value '120'. To the right of this field are two radio buttons: 'Right' (selected) and 'Left'. At the bottom left are two checked checkboxes: 'Display Text' and 'Display Fill'. To the right of these is a 'Save' button. At the very bottom, a text box displays 'Selected: (294.00m - 301.00m)'.

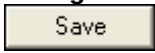
The **Rotate** is represented as a blank space on the layer. The only thing you can physically draw on the layer is a **Slide**. This is shown as a grey bar with the letter S covering the distance of the orientation. If a Toolface is entered into the data entry window the slide orientation is viewed. 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.

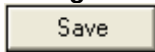
☒ **Display Fill** check box allows the user to view the black strip drawn in by the user.

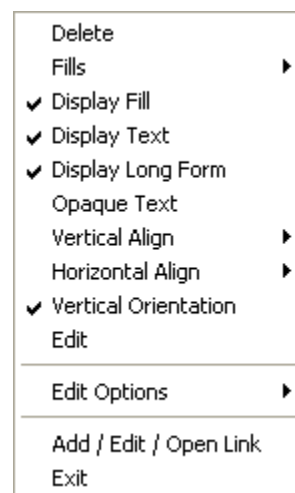
Drawing a Slide

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.
4. **Release the mouse button** and the Slide will be drawn accordingly.
5. If you want to fill in the Toolface degrees and orientation, **Click on the slide** you just dragged, so that it is refreshed in the builder and then **Type** in the Toolface Orientation in degrees in the **Toolface 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 **Right or Left Radio buttons** (if applicable)
7. **Click** on the  **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 Toolface Orientation in degrees in the **Toolface 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  **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.



A right-click context menu with a white background and a thin border. It contains the following items: 'Delete', 'Fills' (with a right-pointing arrow), '✓ Display Fill', '✓ Display Text', '✓ Display Long Form', 'Opaque Text', 'Vertical Align' (with a right-pointing arrow), 'Horizontal Align' (with a right-pointing arrow), '✓ Vertical Orientation', 'Edit', 'Edit Options' (with a right-pointing arrow), 'Add / Edit / Open Link', and 'Exit'.

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.

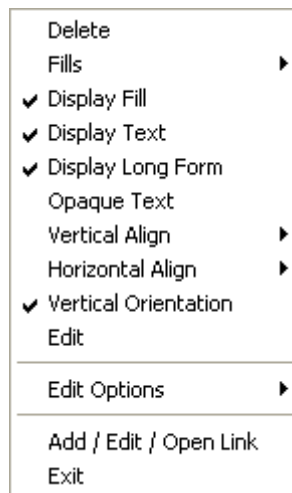
Resizing a Slide

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  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  **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.



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 Toolface orientation if entered being displayed or not on the slide interval.

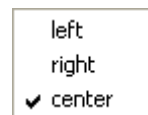
Display Long Form Option - Not applicable.

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 Toolface 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 Toolface orientation text to be aligned and oriented within that slide interval.



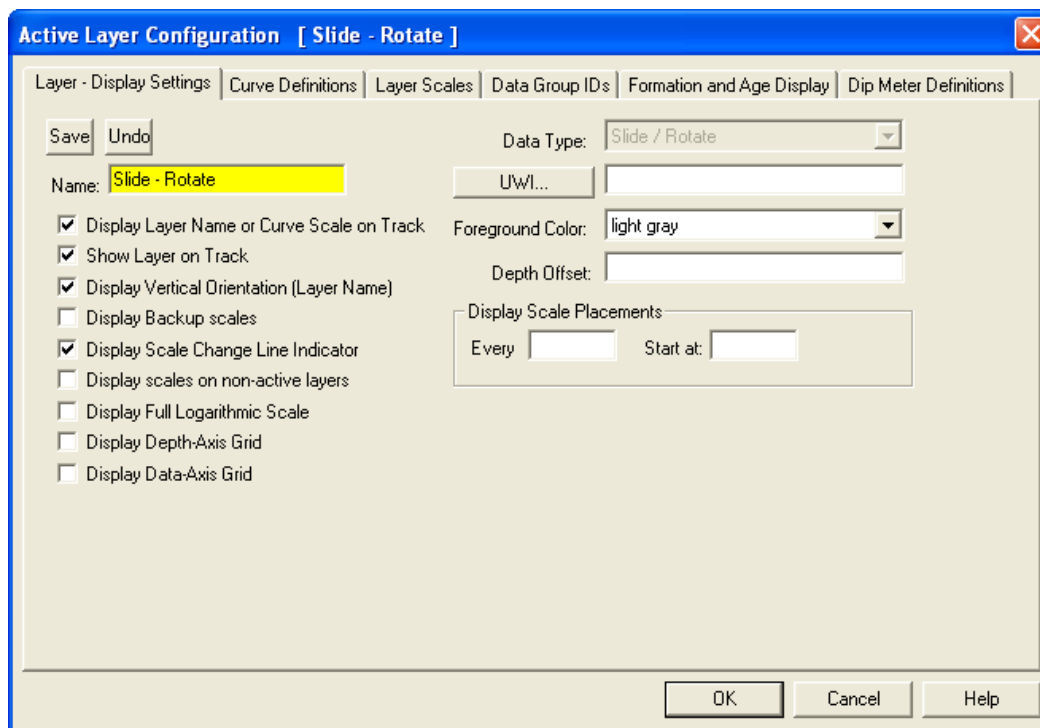
Horizontal Align Option - **Right click on an existing slide** with the builder open to activate the pop out menu seen above and **select Horizontal Align** and this will activate another menu and select from the left right centre choices and allows the user to determine how they want the S (Slides) or the Toolface 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.

Note: 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.



Curve Layer

We have given the user the ability to add Hybrid Log Scales (typical for Resistivity Curves from the Wireline and LWD logging tools) such as scales from 0.2 to 2000 (ohmm). But we have given you the ability to start at any starting point on the left scale but the user has to finish the grid pattern with the ending point. An example of this would be 4 to 40000. We have also given the user some right click options to display the scale.

We have also streamlined the Curve Scales when using an existing log template that the curve scales used in the template will be the defaults for the new log.

Adding a (Logarithmic) Curve to the New Curve Layer

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 such thing as a backup scale on a logarithmic curve. Backup Scale: straight shift
6. Click on the **OK** 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:

Note: 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:

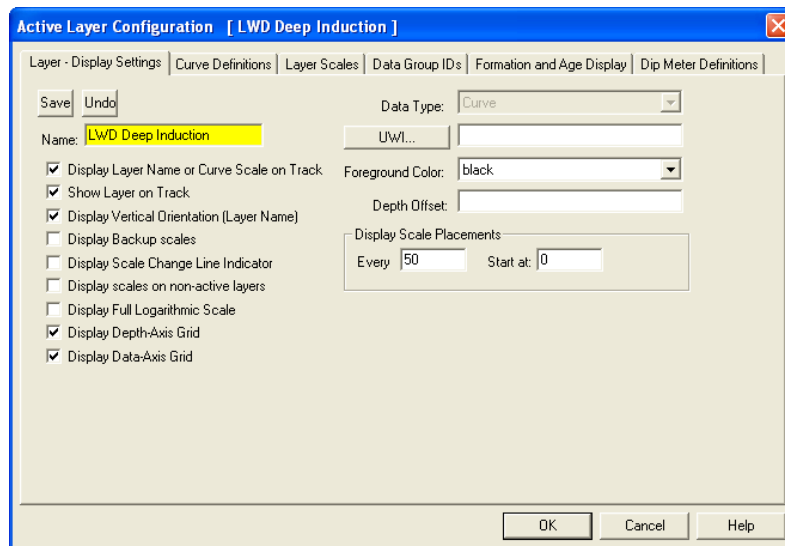
Digital Curve

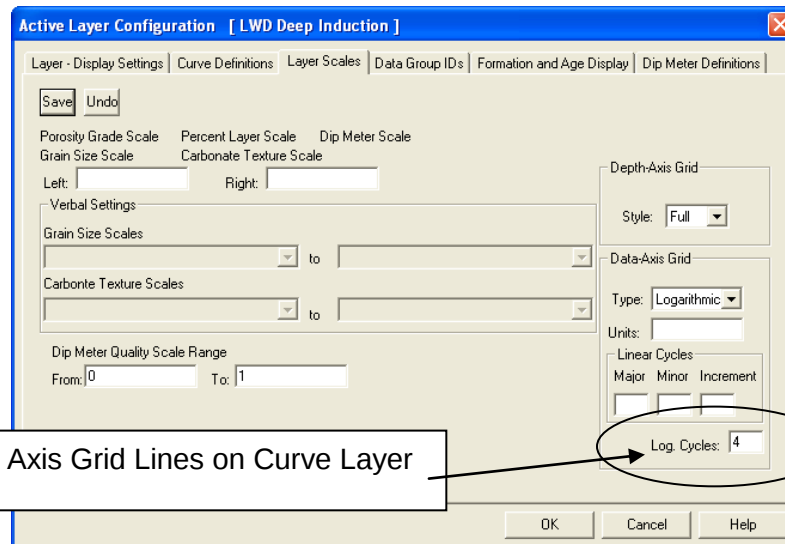
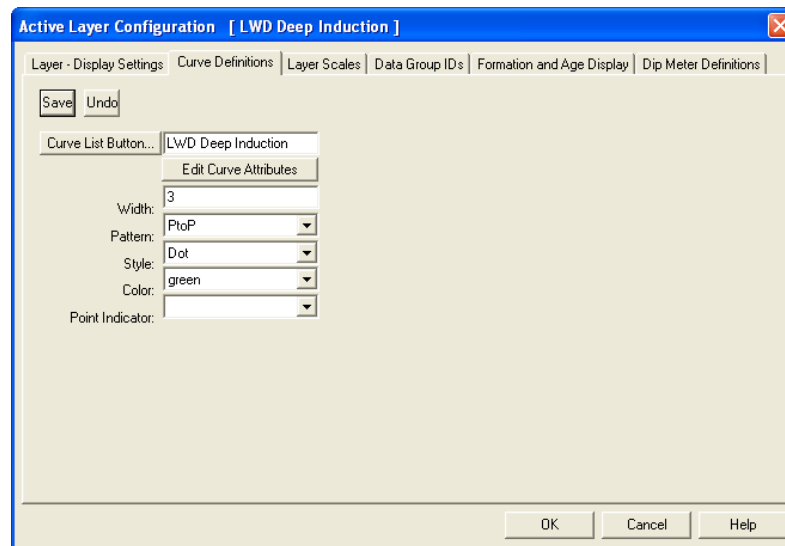
Name	30	Character	Mandatory
Units	12	Character	Mandatory
Depth Units	12	Character	Mandatory
Null Value	10.5	Numeric	Optional
Remark	50	Character	Optional

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

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.





Logarithmic Data Axis Grid Lines on Curve Layer
Handled Here

Curve Layer

Digital Curve - Right Click 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. We have added a Scale text Orientation to the pop out menu.

The **Scale Text Orientation** 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

