A grey square icon with the word "Section" in black text at the top and the number "11" in large white text below it.

11 Merge/Splice, TVD Merge/Splice

The Wizard, Merge, Splice and TVD module allows data from one or more database files to be manipulated in the depth domain and output to one or more destination files. Data may be depth adjusted and correlated, curves from multiple runs spliced together, outputs renamed etc. The module also includes the capability to calculate True Vertical Depth (TVD) from directional survey data and generate log data referenced to TVD for subsequent plotting and other operations. Most of the Merge program operations may be accomplished with only one pass through the data.

Double-click the Merge icon in the Warrior group



FIG: 11.1 Warrior Group

11.1 Wizard

The Wizard option is easy way to do Merge two Passes, Splice, Replace and Add curves

11.1.1 Merge two Passes

Double-click the Merge two Passes option.

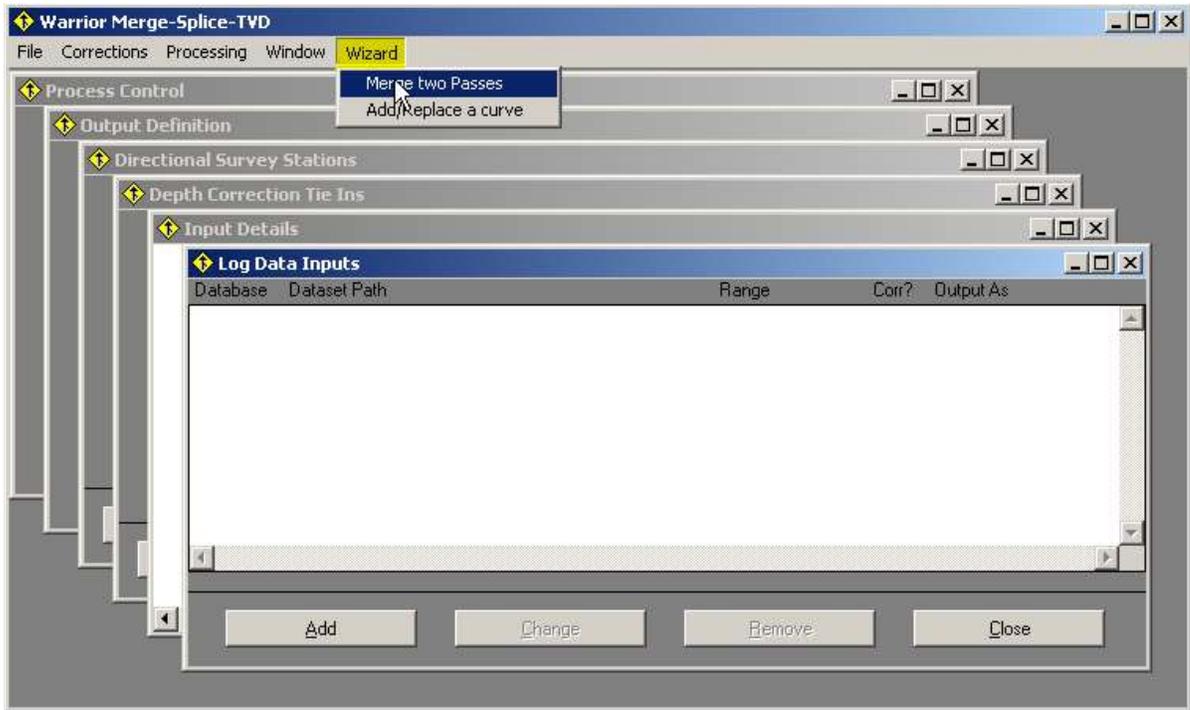


FIG: 11.2 Wizard/Merge two passes option.

Set the Base Pass as Upper Pass or Lower Pass and select the Database

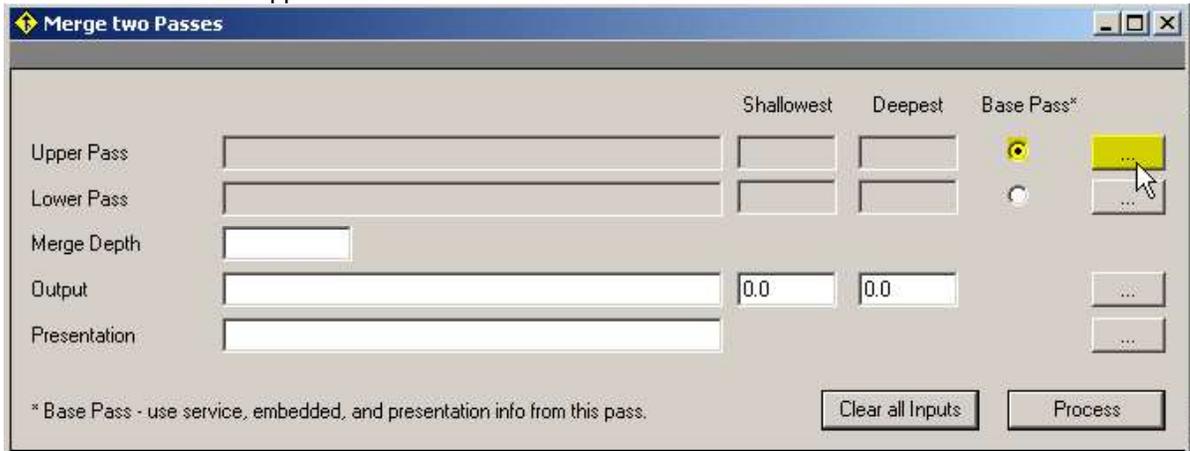


FIG: 11.2 Merge two Passes set the Base Pass as Upper Pass

Select the Input pass to merge from the Database

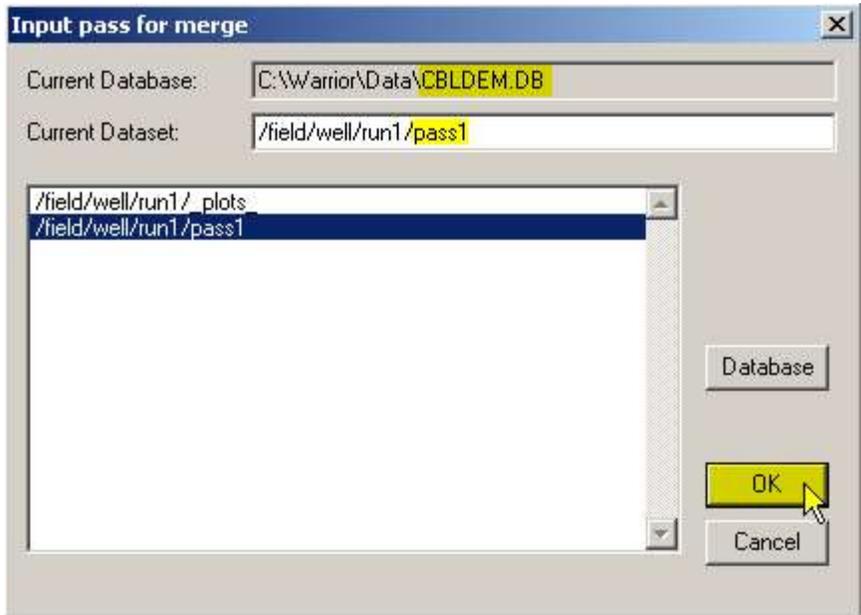


FIG: 11.3 Select Input pass for Merge

Select the Pass from the database to set as Lower Pass

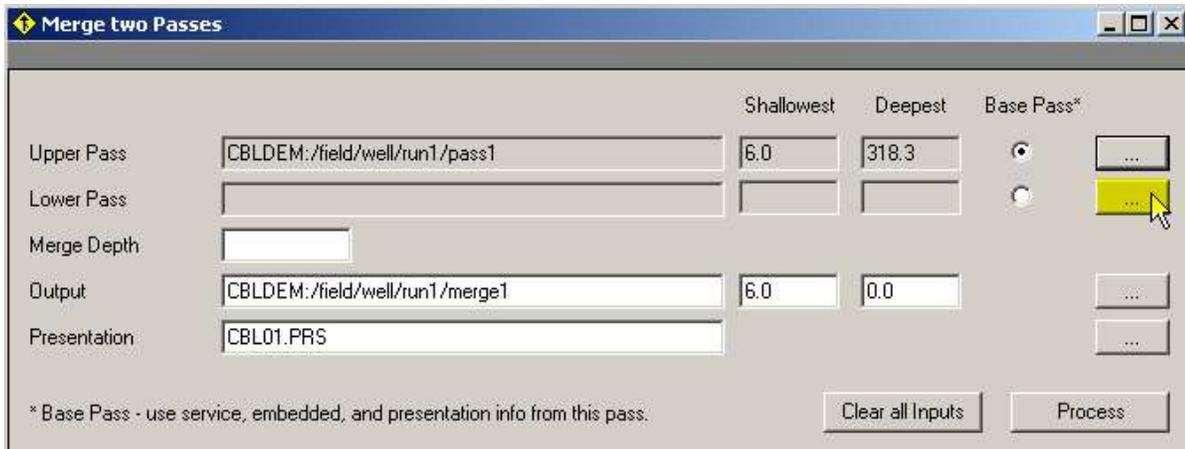


FIG: 11.4 Select Pass as Lower Pass

Select the Pass from other Database

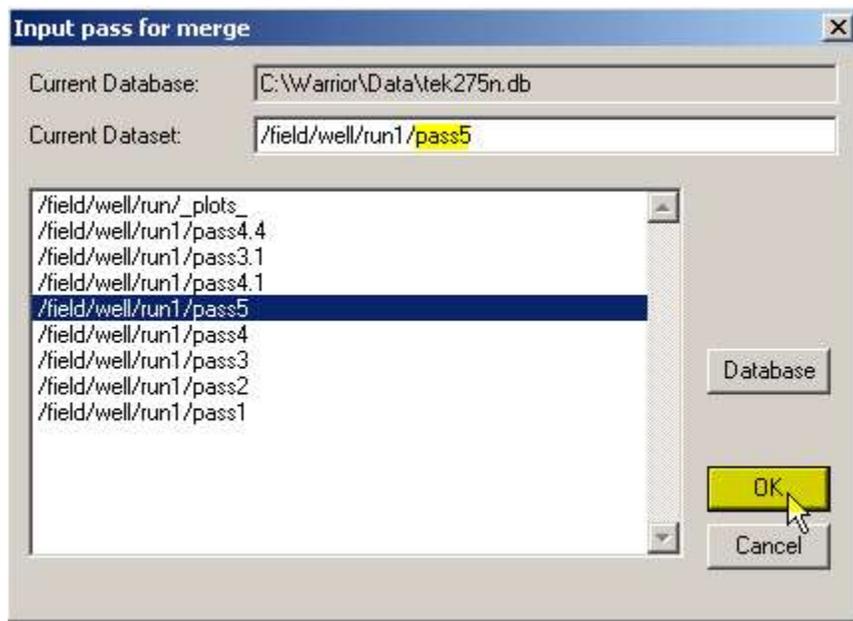


FIG: 11.5 Select pass from the Database

The software by default created a pass (Merge1).

Set the depth to start the Merge1 (Splice the curves), Define the log interval and set the presentation.

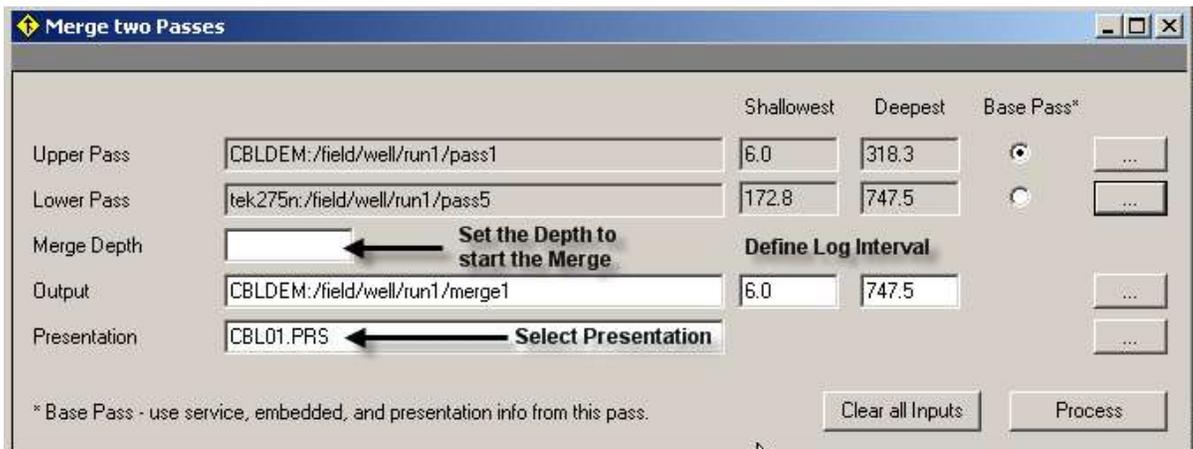


FIG: 11.6 Merge two passes

Double-click the Process bar

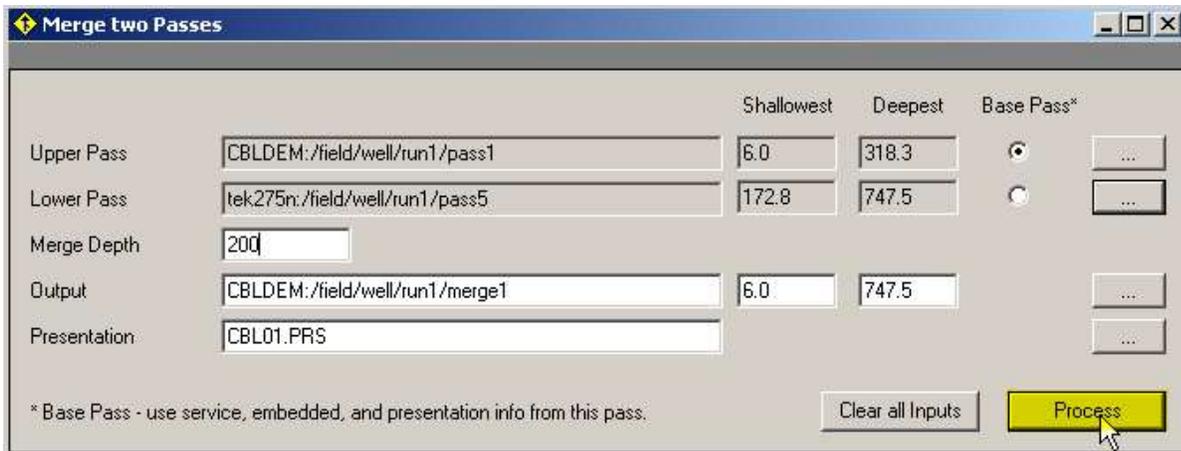


FIG: 11.7 Start the Process

Processing the Merge 1

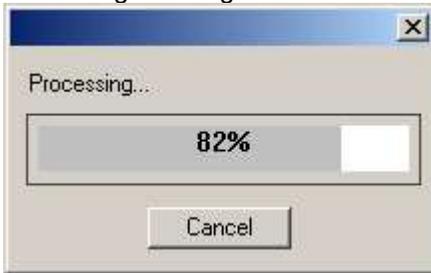


FIG: 11.8 Processing

Select Interactive Plot in the warrior group

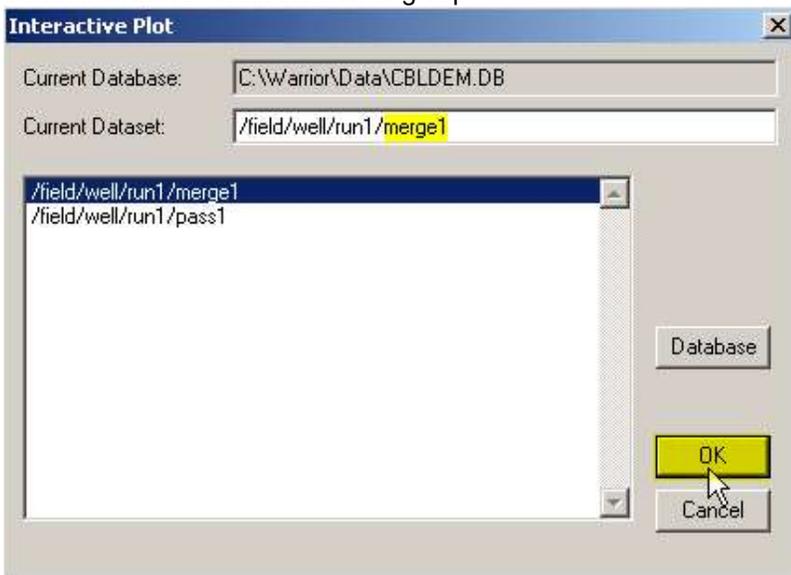


FIG: 11.9 Select Database from interactive plot

Screen plot the Merge1 check the Merge the curves (Splice) at 200 FT.

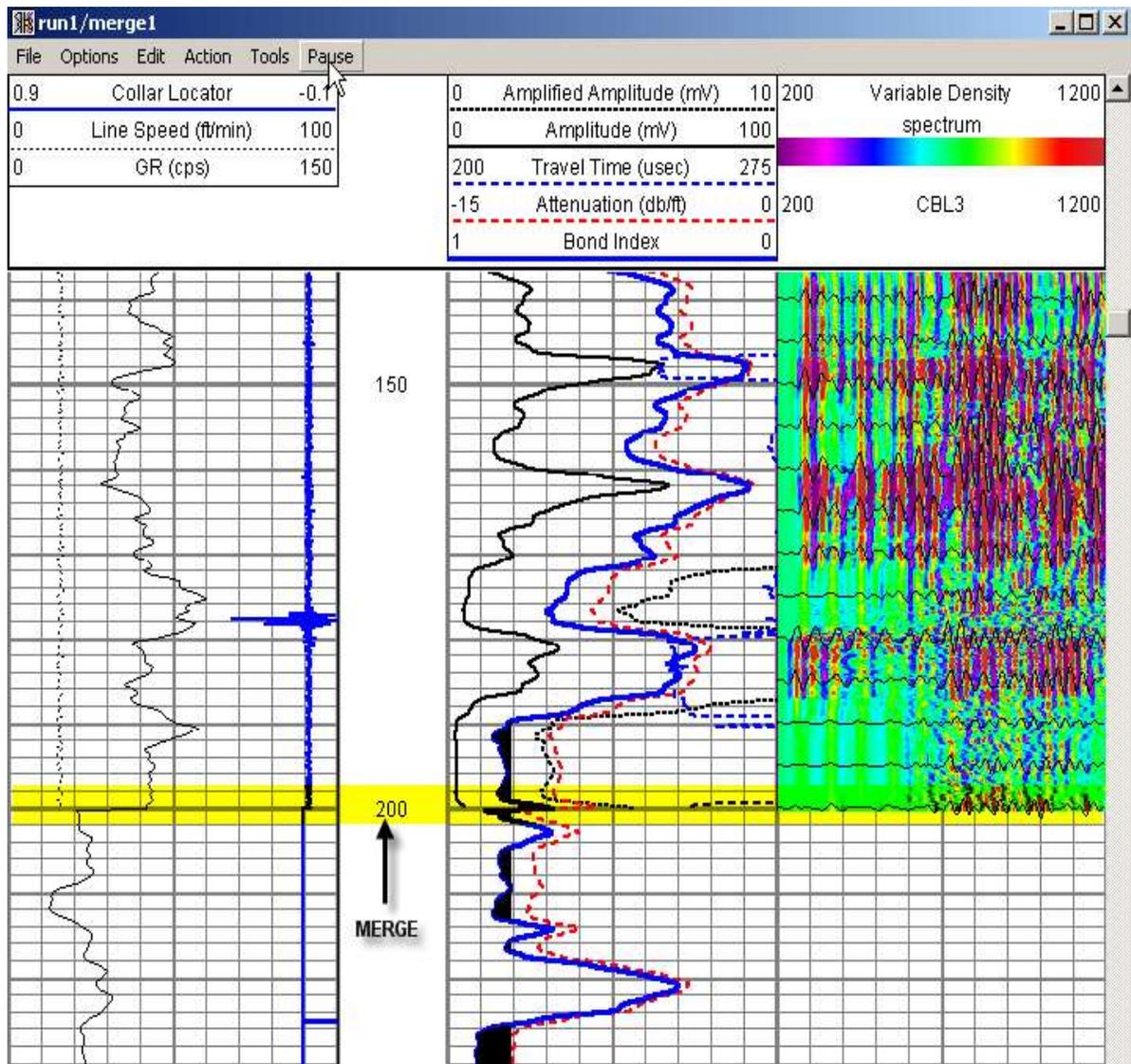


FIG: 11.10 Screen Plot Merge1

11.2.2 Merge two Passes (Add Curves)



FIG: 11.11 Select Add/Replace a curve

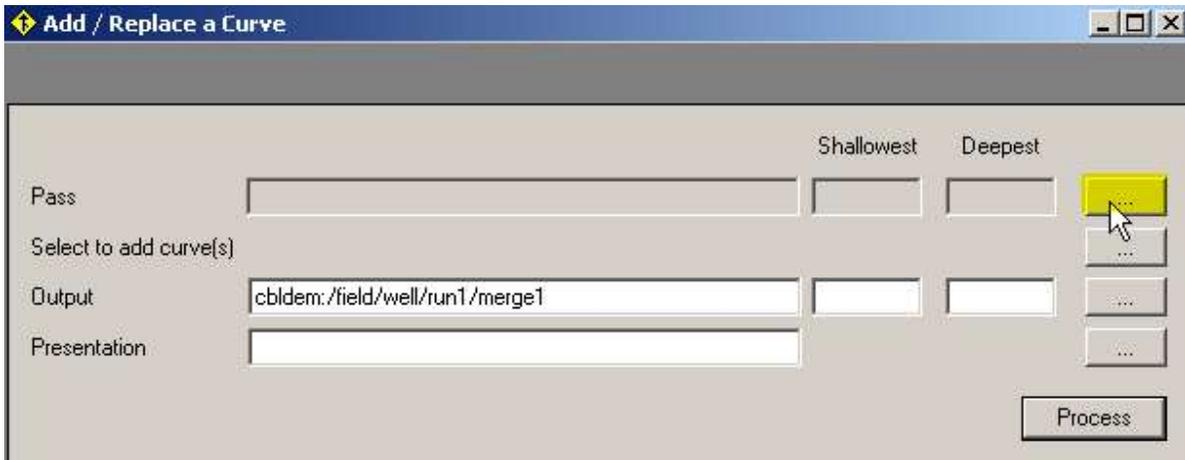


FIG: 11.12 Select the Base Pass

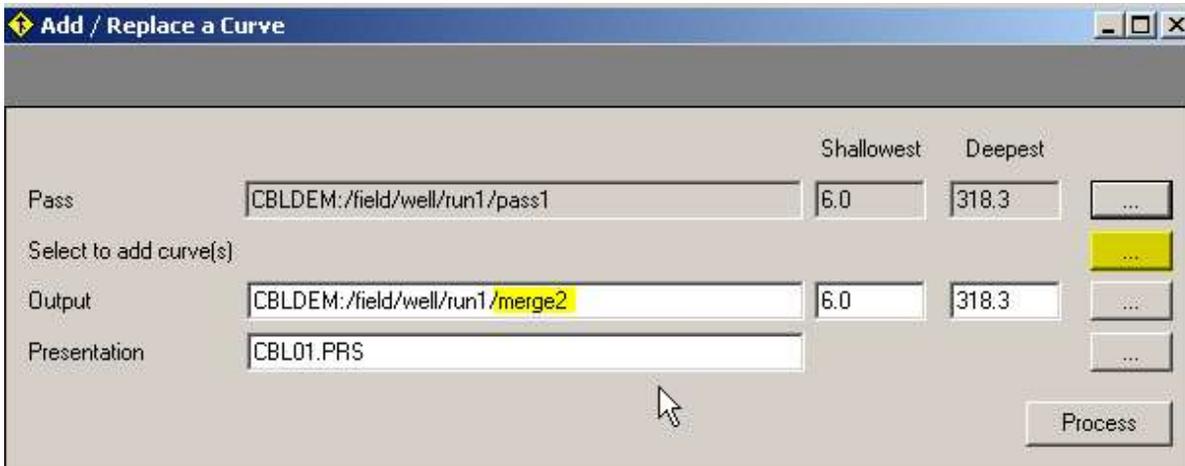


FIG: 11.13 Select to add curve

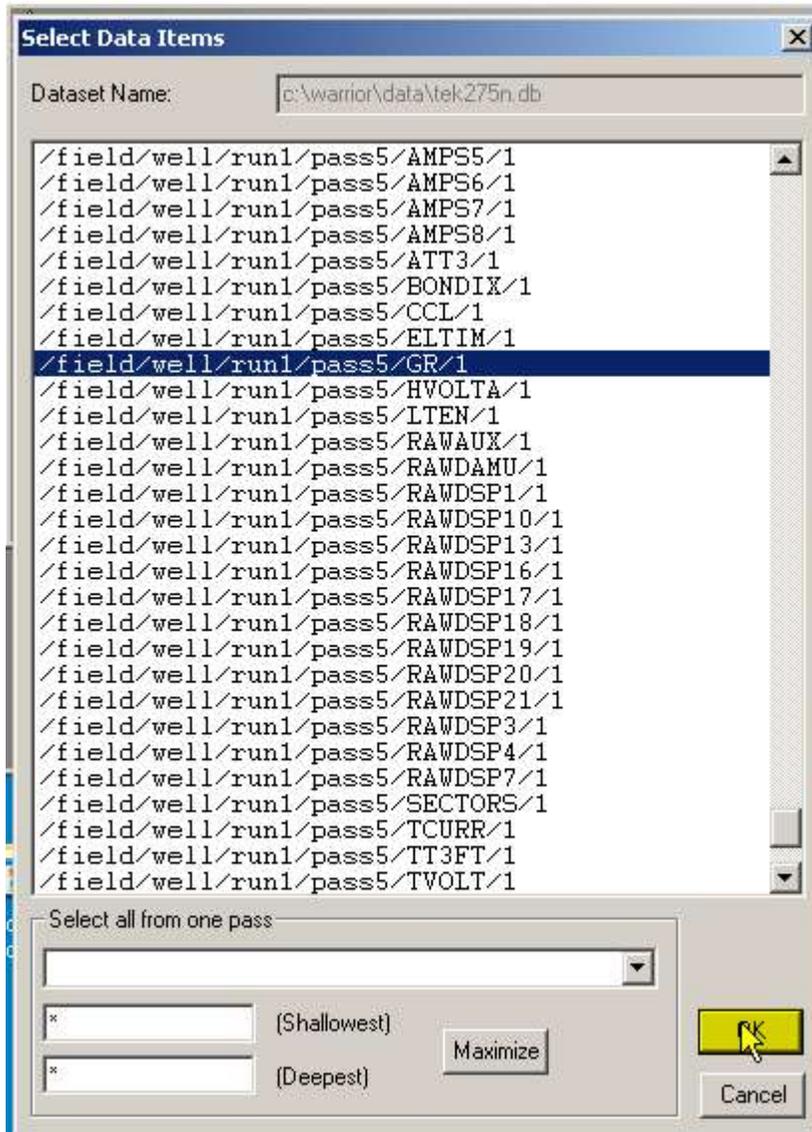


FIG: 11.14 Select the curve

Database	Dataset Path	Range	Corr?	Output As
CBLDEM	field/well/run1/pass1/CBL3/1	15.5-316.8		CBL3
CBLDEM	field/well/run1/pass1/CCL/1	6.1-307.2		CCL
CBLDEM	field/well/run1/pass1/GR/1	12.8-313.8		GR
CBLDEM	field/well/run1/pass1/LSPD/1	6.3-307.3		LSPD
CBLDEM	field/well/run1/pass1/LTEN/1	6.1-307.2		LTEN
CBLDEM	field/well/run1/pass1/RAWADC/1	6.0-307.4		RAWADC
CBLDEM	field/well/run1/pass1/RAWCTR/1	6.0-307.3		RAWCTR
CBLDEM	field/well/run1/pass1/RAWVVF1/1	6.0-307.3		RAWVVF1
CBLDEM	field/well/run1/pass1/TCURR/1	6.1-307.2		TCURR
CBLDEM	field/well/run1/pass1/TT3/1	15.5-316.8		TT3
CBLDEM	field/well/run1/pass1/TVOLT/1	6.1-307.2		TVOLT
tek275n	field/well/run1/pass5/GR/1	**		GR

FIG: 11.15 Select the curve in log Data Inputs

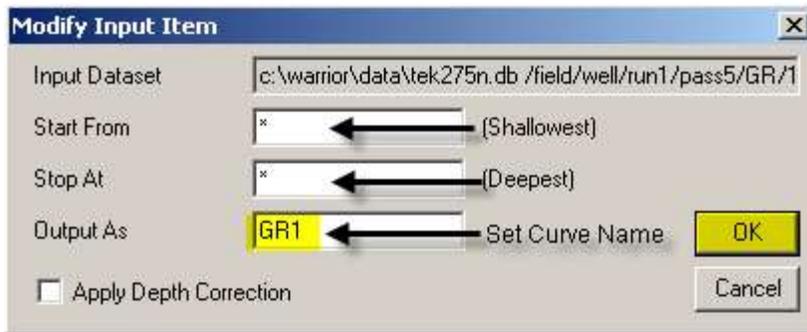


FIG: 11.16 Modified input Curve

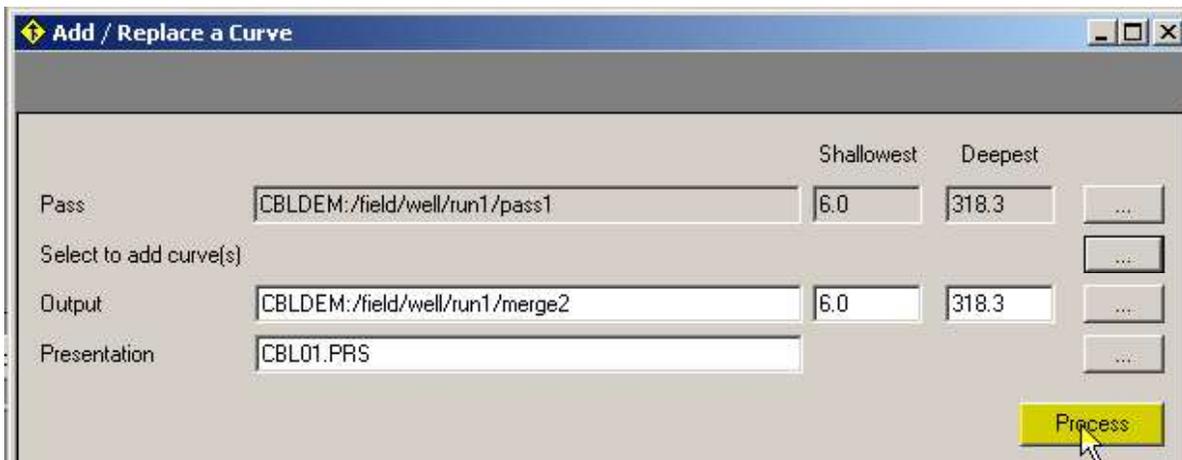


FIG: 11.17 Add Curve and Process



FIG: 11.18 Processing

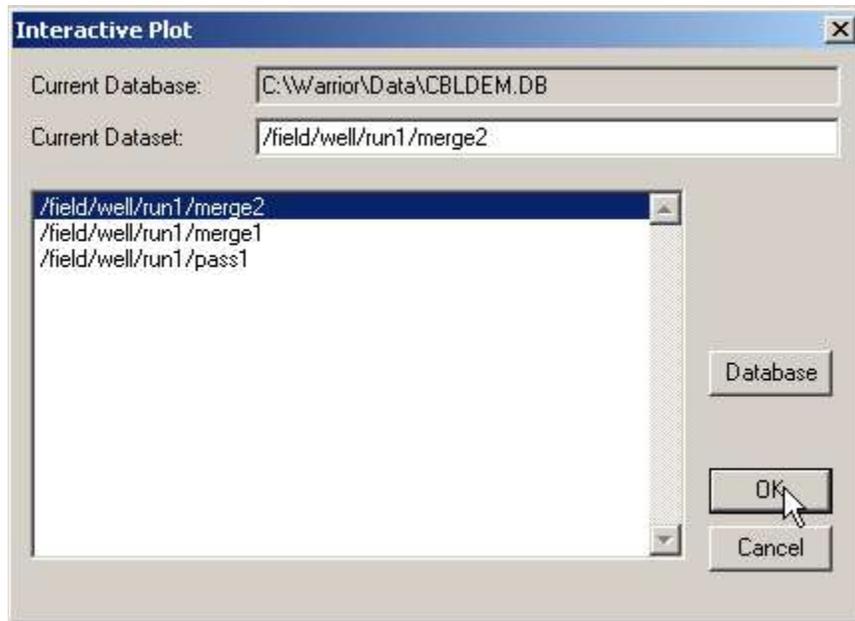


FIG: 11.19 Interactive Plot select pass

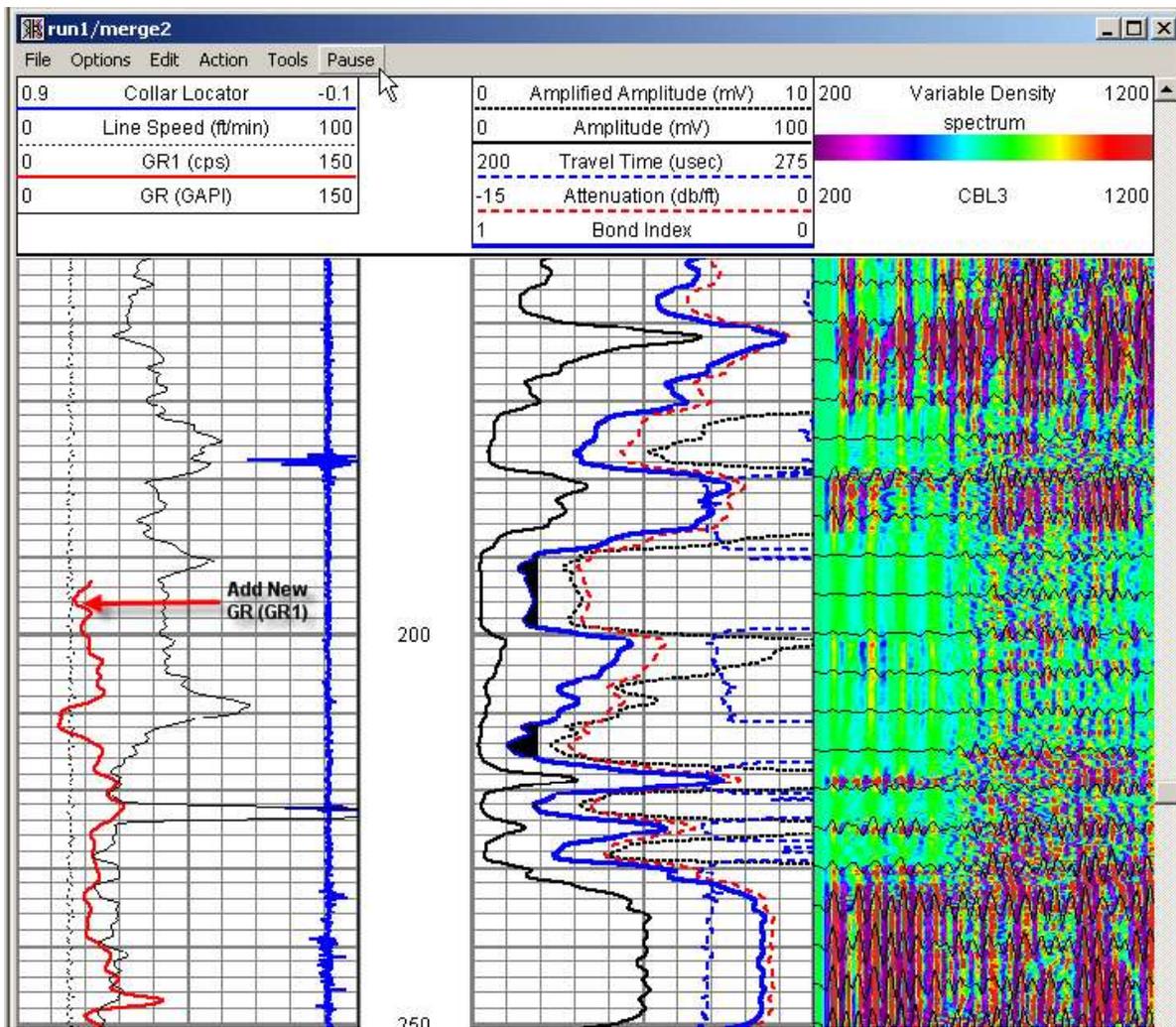


FIG: 11.20 Plot the Pass

11.2.3 Merge two Passes (Replace curve)

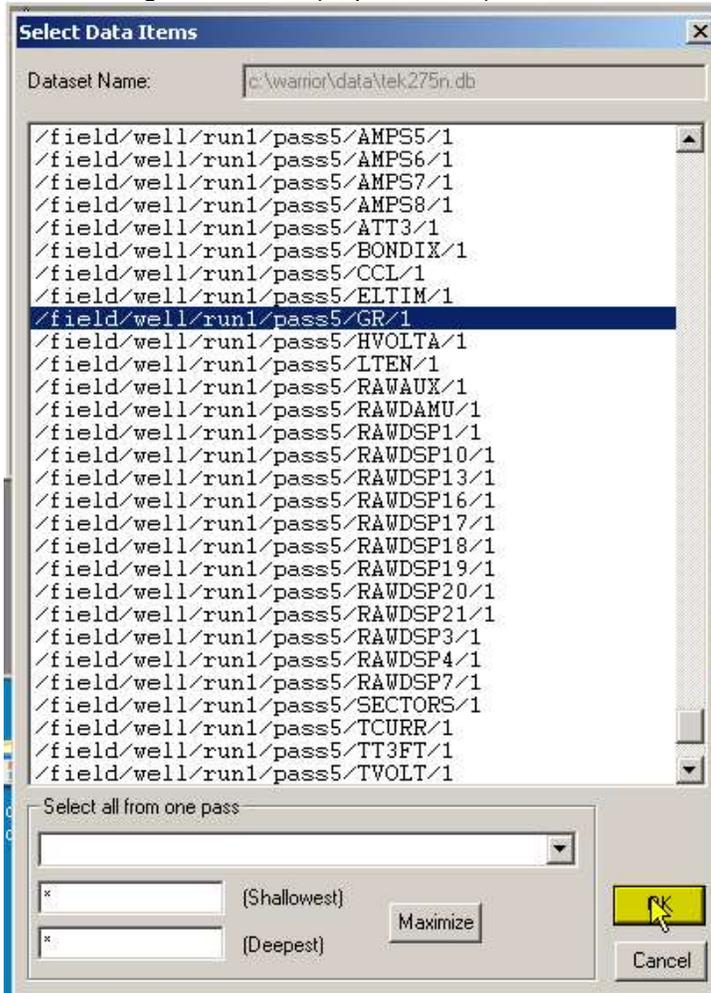


FIG: 11.21 Select Curve from the database

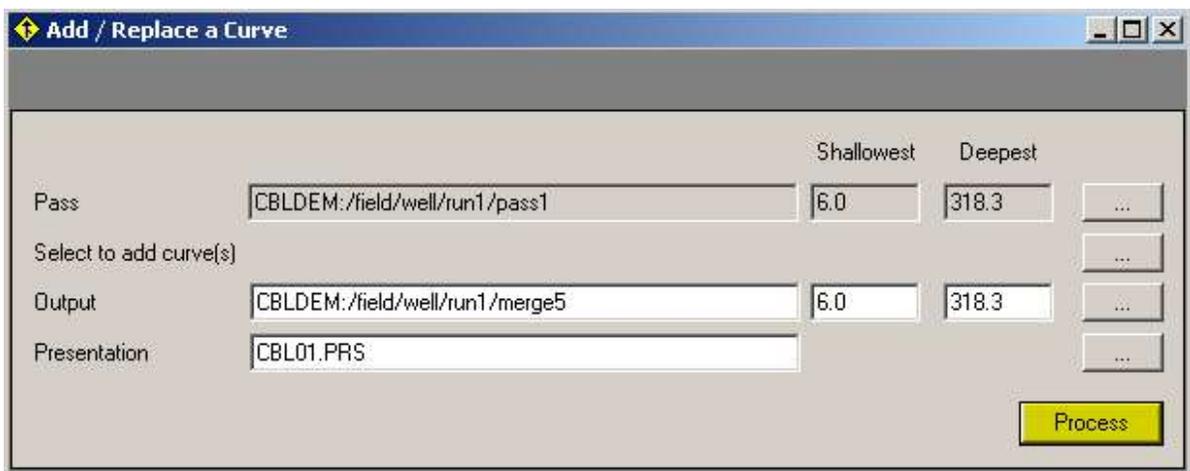


FIG: 11.22 Process

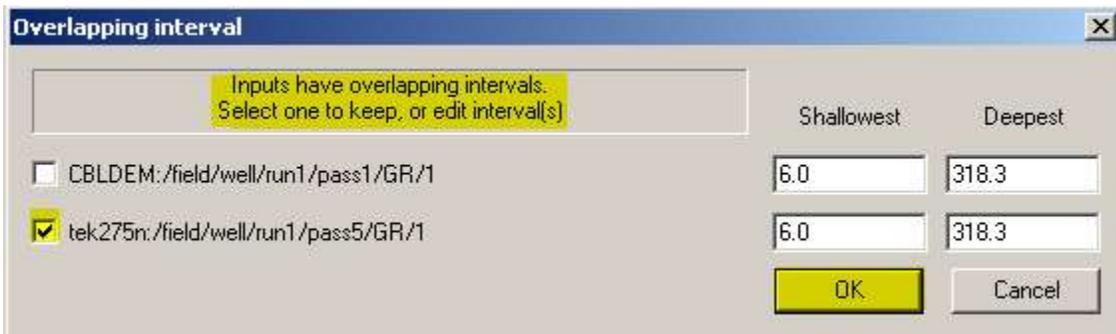


FIG: 11.23 Select the database to keep the curve

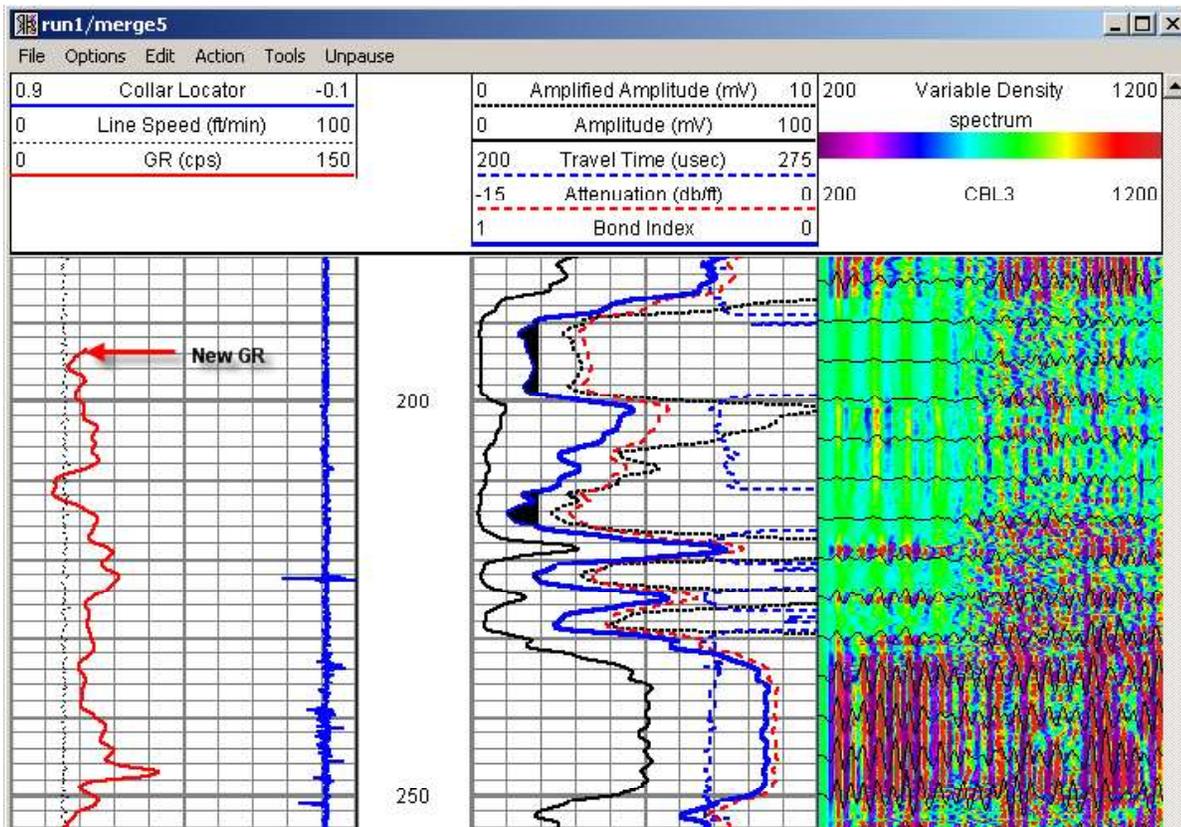


FIG: 11.24 Plot the pass with the new curve that replaced the old ones.

11.2 Merge

Double-click the Merge icon in the Warrior group. The Merge Splice TVD window will appear as shown below.

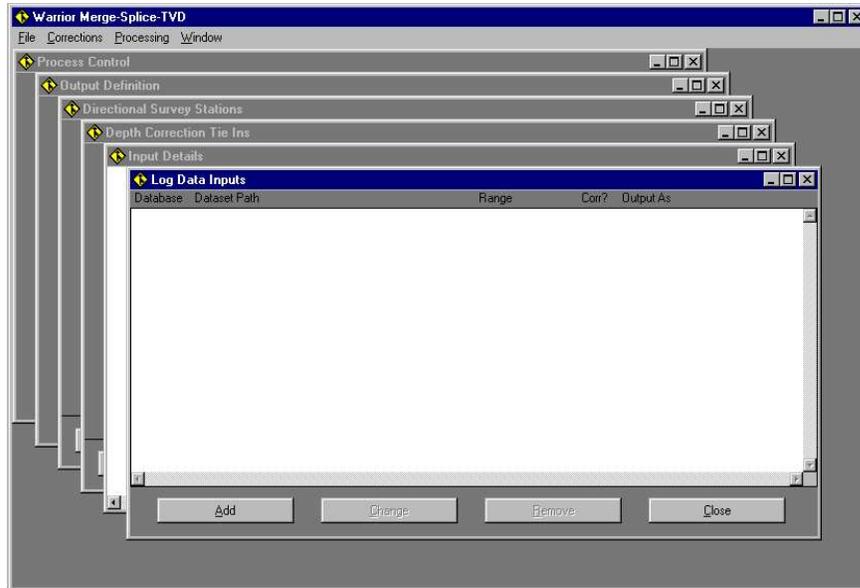


FIG: 11.25 Log data Inputs

The Merge module interface consists of six independent windows within the main Merge window. Any or all of the windows may be displayed at the same time.

Note that if you loose a window by inadvertently or deliberately closing it, you can get them all back by clicking Window/Open All in the main menu bar.

The main Merge menu box contains several pull down menus and selection options, which control the operation and set up of the Merge sub-system. The pulls down menu functions are as follows:

11.2.1 File

11.2.1.1 Select Input Log Data.

Selecting this option brings the **Log Data Input** window to the foreground. Data items e.g. curves, are selected from their source database(s) and dataset(s), and displayed as a scrolled list in the Log Data Input Window. Within the Log Data Input window several processing parameters are set.

11.2.1.2 Detail Selected Inputs

Selecting this option brings the **Input Details** window to the foreground. This window displays detailed information concerning the data items selected for processing.

11.2.1.3 Select Output Path/File

Selecting this option brings the **Output Definition** window to the foreground. This allows definition of the database and dataset to which the processed data is to be output. A default presentation, with start and stop depths, may be *associated* with the output database in this dialog also. Note that **Browse** buttons are available so that existing databases and presentation files may be easily selected.

11.2.2 Corrections

11.2.2.1 Enter Depth Tie Ins

Selecting this option brings the **Depth Correction Tie Ins** window to the foreground. Processing parameters for data depth corrections are entered in this window.

11.2.2.2 Enter Directional Data

Selecting this option brings the **Directional Survey Stations** window to the foreground. Entry of directional survey data for TVD calculations is made in this window.

11.2.3 Processing

11.2.3.1 Process Commands.

Selecting this option brings the **Process Control** window to the foreground. Three selections may be made in this window. The type of processing to be performed, if the processing is to be done as a foreground or background task, and to the default depth units are to be changed.

11.2.3.2 Windows

Conventional Windows commands for manipulating windows on the screen

11.3 Merge data items (curves) from two (or more) log passes

If the Log Data Inputs window is not active, click on **Select Input Log Data** under the **File** menu. The Log Data Input window appears in the foreground. Clicking the **Add** button brings up a file selection box where an existing log database may be selected in the usual way.

Once a database is selected the contents in terms of runs, passes, curves etc. are displayed as a scrolled list, as shown below.

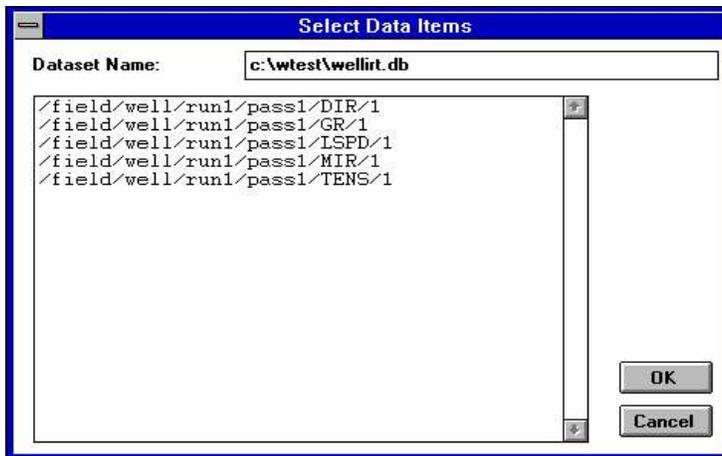


FIG: 11.26 Select Curve from the database

Select the curves and other items, present in this list that you wish to merge. When all the required curves present in the current database have been selected click **OK** and the selected items are passed to the **Log Data Inputs** list as shown below.

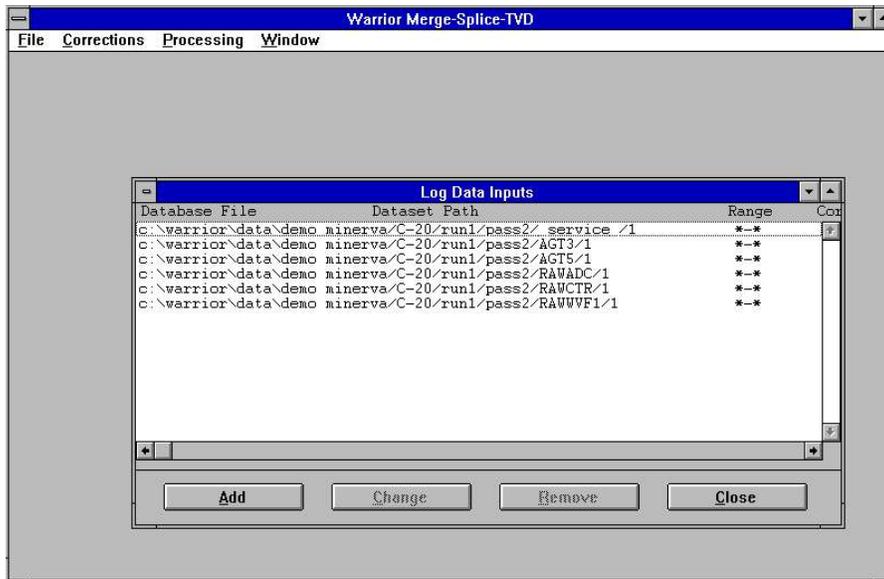


FIG: 11.27 Log Data Inputs

In the same way (**Add** etc.) curves and other data items may be selected from other databases until all the required curves are present in the Log Data Inputs window.

From within the Log Data Inputs window, details of the processing parameters for the individual data items are set. The processing parameters which may be adjusted are the depth range, the name of the output curve and the application (or otherwise) of depth corrections.

Select one or more curves from the input list by highlighting them in the normal way. Note that **Change** button is now activated.

Clicking the **Change** button brings up the **Modify Input Item** dialog as shown below.

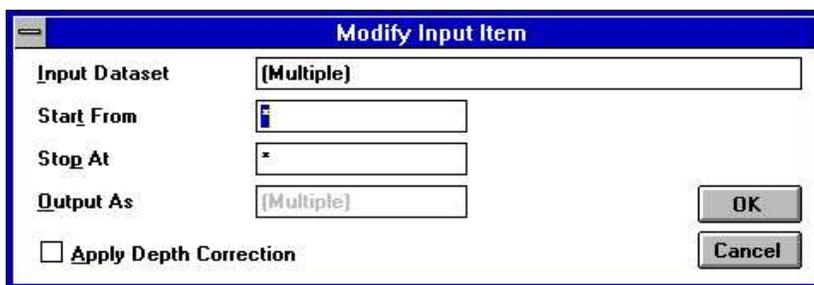


FIG: 11.28 Modify input item

If a group of curves was selected, the Input Dataset is shown as Multiple because several curves have been selected. If a single curve is selected the actual name of the curve is presented.

The depth range of the output curve(s) may be set as desired or left as the initial range. The name of the output curve may be changed only if a single curve was selected.

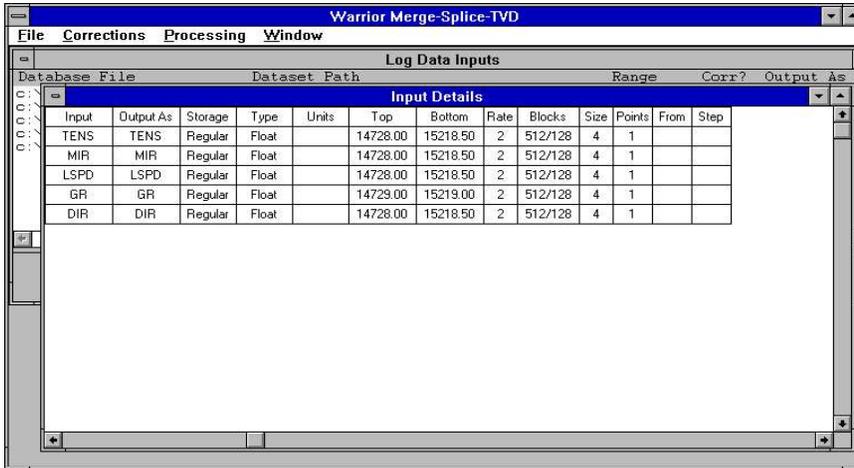
If depth corrections are to be applied the **Apply Depth Correction** box must be checked and depth correction tie-in points entered (see below).

Note that currently only one set of curves may be depth corrected per pass through the data. If you wish to correct more than one curve (or group of curves), where one curve (or group) has different depth corrections than the others, then tie-in points must be entered for the first group, the merge process run and then the second curve (or group) selected, the second group of tie-ins entered, and a second merge process run.

Detailed information on all data items in the Log Data window is present in the Input Details window.

11.4 Access detailed information on data items

Select Detail Selected Inputs from the File menu. A new window is generated as shown below. A variety of information is shown about all the curves selected for processing. The horizontal and vertical scroll bars are used to access all the available information.

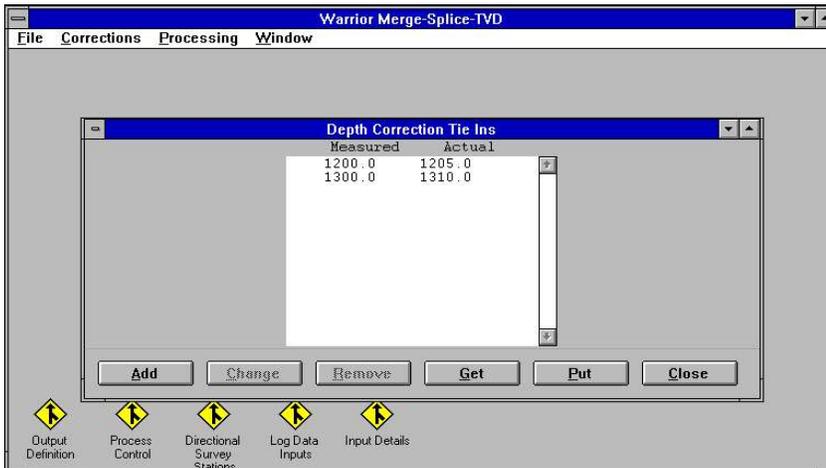


Input	Output As	Storage	Type	Units	Top	Bottom	Rate	Blocks	Size	Points	From	Step
TENS	TENS	Regular	Float		14728.00	15218.50	2	512/128	4	1		
MIR	MIR	Regular	Float		14728.00	15218.50	2	512/128	4	1		
LSPD	LSPD	Regular	Float		14728.00	15218.50	2	512/128	4	1		
GR	GR	Regular	Float		14728.00	15219.00	2	512/128	4	1		
DIR	DIR	Regular	Float		14728.00	15218.50	2	512/128	4	1		

FIG: 11.29 Input Details

11.5 Enter depth tie in points

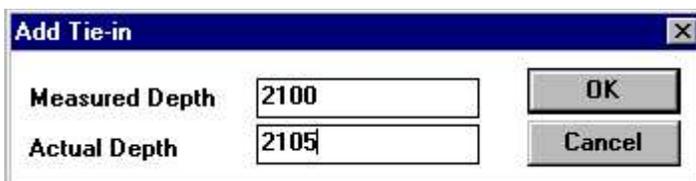
Select **Enter Depth Tie Ins....** bringing up the **Depth Correction Tie Ins** dialog as shown below.



Measured	Actual
1200.0	1205.0
1300.0	1310.0

FIG: 11.30 Depth Correction Tie Ins

Depth tie in points may be entered from the keyboard by first clicking the **Add** button to obtain the window shown below



Measured Depth: 2100
Actual Depth: 2105

FIG: 11.31 Add Tie-in

Enter the current log depth in the Measured Depth box, and the depth to which you wish to move those log points in the Actual Depth box. Click OK and the points appear in the scrolled list. The Add Tie-in window continues for entry of the next tie-in point. When all tie-in points have been entered, click Cancel.

The log interval below the lowest tie-in point will be linearly shifted up or down, and by an amount corresponding to the lowest tie-in values.

The log interval above the highest tie-in point will be linearly shifted up or down, and by an amount corresponding to the highest tie-in values.

The log data between tie-in points will be linearly stretched or squeezed according to the tie-in values.

Note that if only one tie-in point is entered then all the log data will be linearly shifted up (or down) according to the tie-in values. The same result may be achieved much more quickly by using the Apply Linear Shift to a Dataset or Apply Linear Shift to a Data Item functions in the Utilities package.

Tie-in points may be read from and written to a file using the Put and Get buttons. Points may be changed or removed using the corresponding buttons.

Once the changes have been made to the input data, it is necessary to indicate where the merged data is to be written.

11.6 Select the output path or file name.

Choose Select Output File/Path from the File menu. The dialog box shown below appears. The output database and dataset are typed in from the keyboard, or an existing database is selected using the Browse button.

Note that it is usually quicker to select an existing dataset with the Browse button and then modify its name and/or dataset path, than to type in all of the fields from scratch.

A default presentation file may be attached to the output dataset with a depth range defined in this dialog.

The Browse button may be used to select an existing presentation file from those in the system.

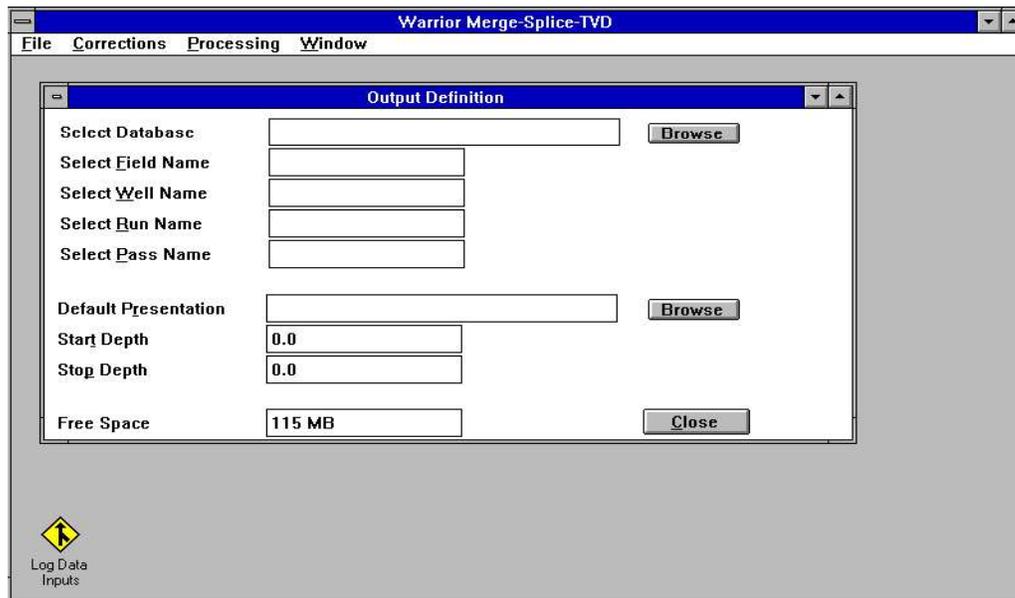


FIG: 11.32 Output definitions

The final step in merging the data is to define the processing operation, the processing mode and the depth units (if other than default).

11.7 Select processing options and start processing

Select Process Commands bringing up the Process Control Window as shown below.

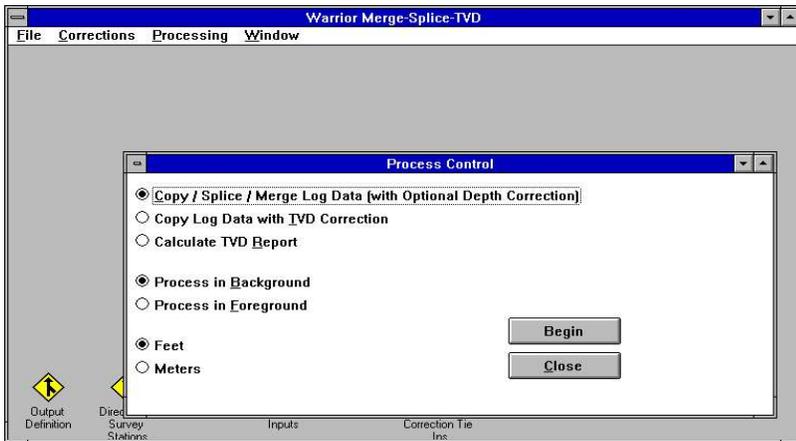


FIG: 11.33 Process Control

Select the Copy / Splice / Merge Log Data to process the data with optional depth corrections. Select Copy Log Data with TVD Correction to generate a new set of log data with depth referenced to TVD calculated from the directional survey data. Select Calculate TVD Report to generate an ASCII directional report. Process in Foreground causes the processing to take place in Windows foreground mode, whilst Process in Background allows processing to take place whilst other tasks, such as logging, are active.

11.8 Splice a curve

Select first input database as described above. Select the first section of input curve to be spliced from the Select Data Items window, then select the second and so on until all the original curves from which the spliced curve is to be assembled are present in the Log Data Inputs window. The original curves may originate from one or more databases.

Select the first curve and input depth range of this curve to be used in the spliced curve e.g. 1200, 1300. Select the second input curve and set its range e.g. 1300, 1400. Select the third input curve.

When all the sections have been defined go to Output Definition and define where the new curve is to be written, as described above. Process Control, select the Copy / Merge...option and click Begin.

11.9 Enter Directional Survey Data

Select Enter Directional Data. bringing up the Directional Survey Stations window as shown below. The depth, borehole inclination, and azimuth are entered in a manner similar to the depth tie in data. The Add, Change, Remove, Get, Put and Close buttons are used in the same manner as previously described for Depth Correction.

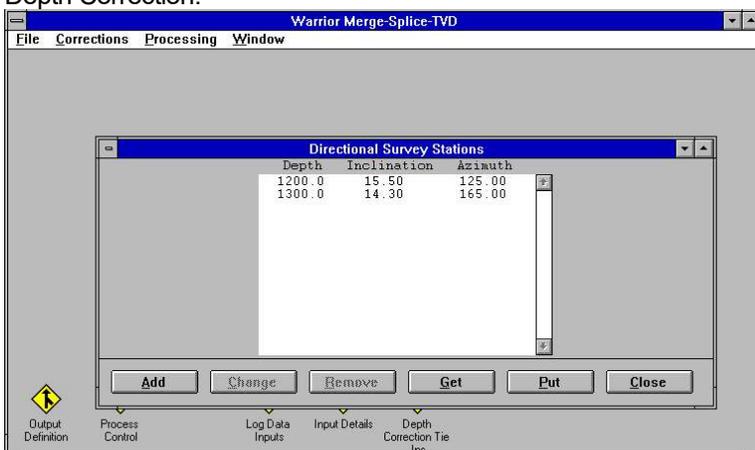


FIG: 11.34 Directional Survey Stations

Once the data items have been selected, the destination file chosen and the processing parameters defined, the Processing menu or Process Control window may be selected to initiate processing of the data as previously described.

The **Window** menu functions are identical to those found in any Windows application, allowing the individual windows e.g. Process Control, Log Data Inputs etc., to be tiled, cascaded, etc., as shown below.

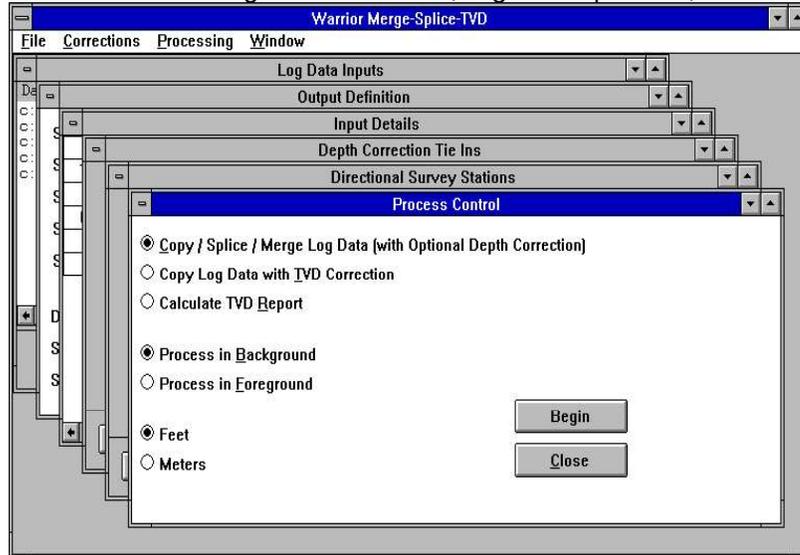


FIG: 11.35 Process Control

Note that the interface to the Merge program may be customized by the user in terms of window sizes and layout. The layout in existence at the time the program is closed will be brought back the next time the program is run.