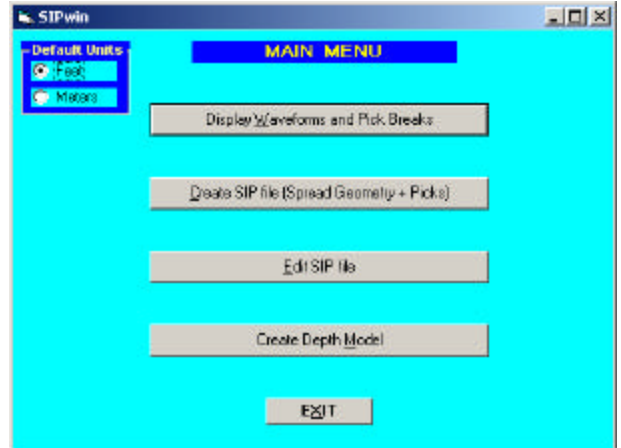
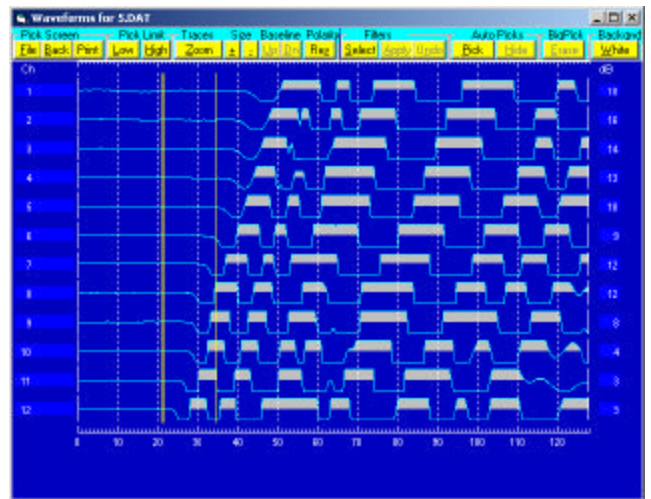


Using SIPwin to Interpret and Invert Seismic Refraction Profiles from the Smartseis

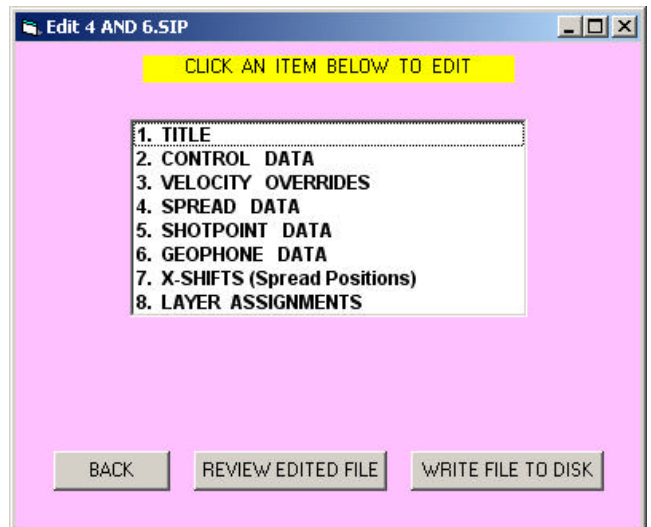
- When you select SIPwin from the program menu or windows explorer, you get the **MAIN MENU**. Usually you proceed through that menu, line by line:



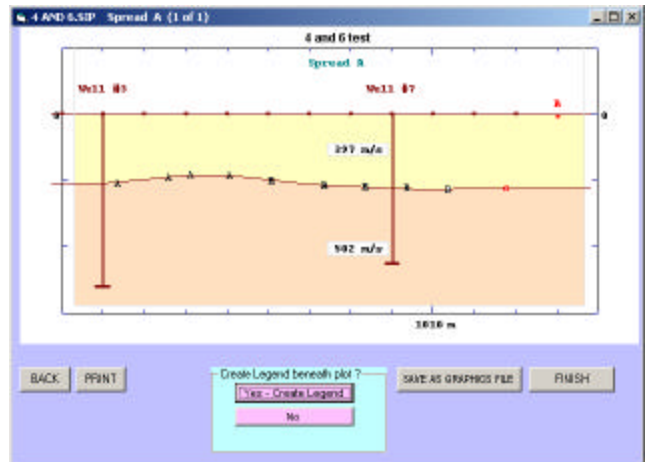
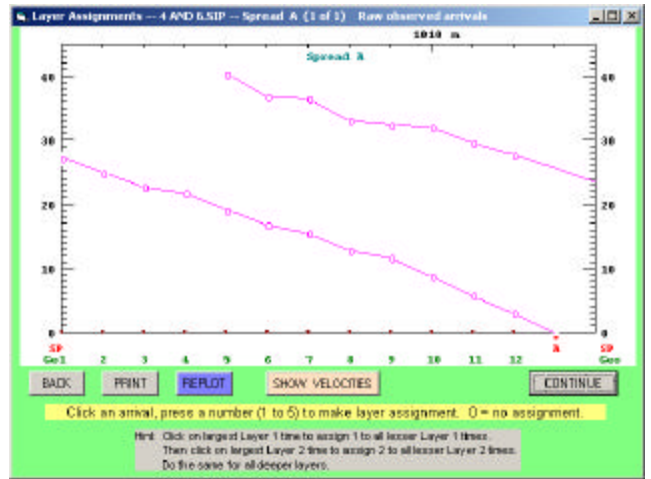
- **Display Waveforms and Pick Breaks** lets you read in a .DAT file saved from the Smartseis. When you read the file, SIPwin displays the attributes of your collected data then it asks if your shotpoint and geophone data are OK. If you like the setup, SIPwin displays the traces. Now, **pick your first breaks**:
 - Set the Low Limit
 - Set the High Limit
 - Hit 'Pick' and SIPwin makes a guess at the first breaks.
 - **Adjust the Picks** by clicking on traces and using the right/left mouse buttons to move the pick. Sometimes it's tricky getting the pick-cursor to respond; go full-screen, click in the box, fiddle,...
 - **Save the Picks** by hitting the File button and SIPwin asks if you want to process another waveform – if you want to interpret a number of shots/spreads on the same line this is your chance – **YES**, and you adjust the picks, etc. for each subsequent file.



- **Create SIP file** by entering the appropriate information in the popup box and then tell SIPwin you want to import your .PIK files. You now get a couple of popup windows which require reasonable obvious answers. Finally you get to the Edit screen like in the figure to the right. This allows access to a number of corrections and checks. You'll almost certainly want to make your **Layer Assignments** now.



- **Layer Assignments** – for each return label them with the layer number from which they came (1 is the uppermost layer) or 0 if you want to omit them from consideration. When you are done, **Save SIP file to DISK** and return to the **main menu**.
- **Create Depth Model** is the next choice on the **Main Menu**. Now SIPwin:
 - Calculates velocities,
 - Shows your data,
 - Displays depths and elevations of layers beneath shotpoints and geophones
 - Draws a cross section at which point you want to edit it by:
 - **Set the Top & Bottom** to get the view and vertical scale you want, the hit **Top & Bottom OK**.
 - Now you can **Move Depth Points** anywhere you want them but generally you'll stick with the inversion routine's solution – **hit OK** and you get a chance to annotate the image with layer velocities. Hit **NEXT** and you get a few chances for various embellishments (mark refraction points, drill holes, etc.)



You can save the final results as a graphics file of various formats and you get a **MODEL.OUT** file which contains all the relevant information for making a nice diagram in another software package.