



Seismic Refraction In-field QC Software for Geometrics seismographs

SIPQC by Rimrock Geophysics:

Pick first breaks

Assign layers

Create depth model

Output to seismograph printer

SeisOpt@Survey by Optim:

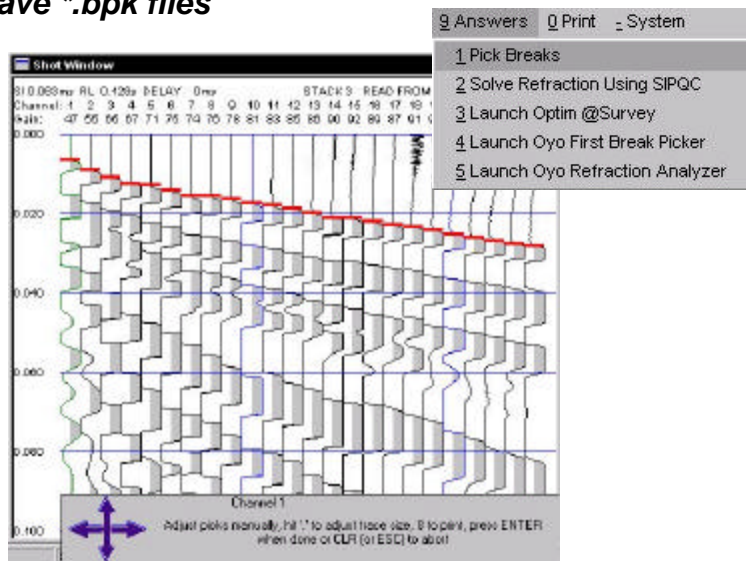
Pick first breaks

Run automated velocity analysis

Output to seismograph printer

1

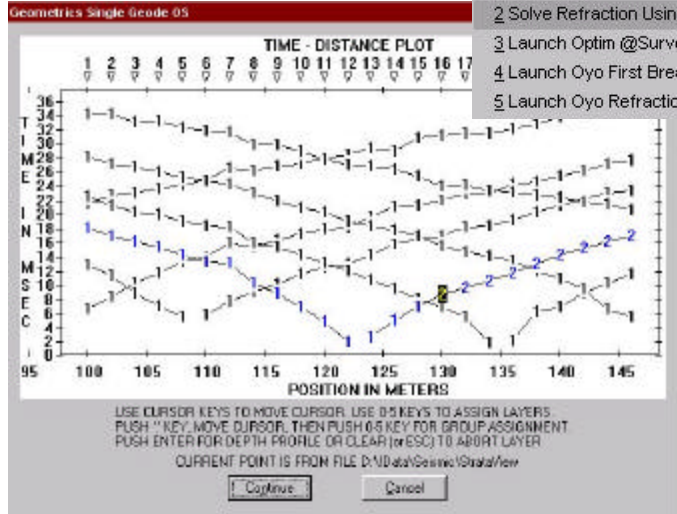
Pick first breaks from the seismograph Answers menu, save *.bpk files



2

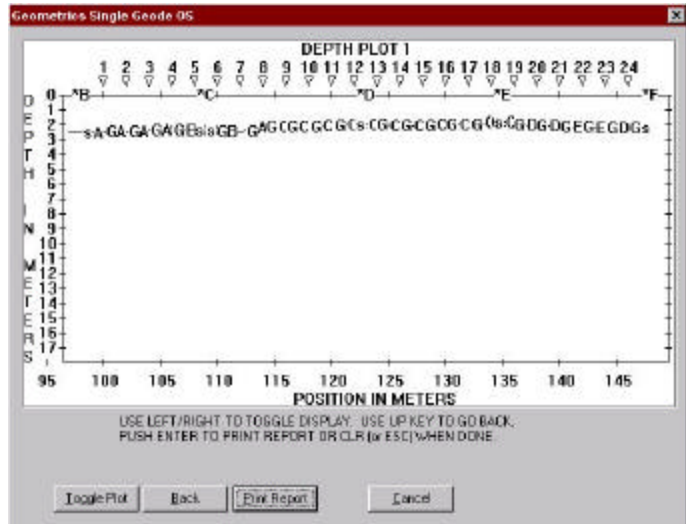
Select Solve Refraction Using SIPQC to select the first break files and assign layers

- Answers Print System
- 1 Pick Breaks
- 2 Solve Refraction Using SIPQC
- 3 Launch Optim @Survey
- 4 Launch Oyo First Break Picker
- 5 Launch Oyo Refraction Analyzer



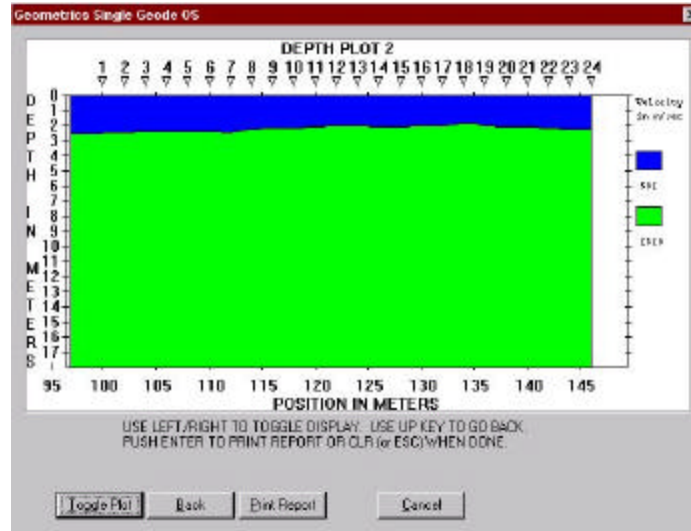
3

Based on the layer assignments, SIPQC outputs a depth model using the delay time method



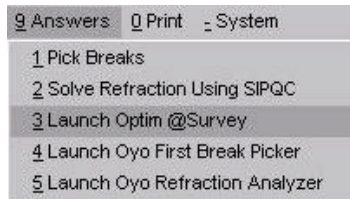
4

The depth model may be viewed as a color plot and output to the seismograph printer



5

Use the first break files to run an automated velocity analysis with Optim's SeisOpt@Survey

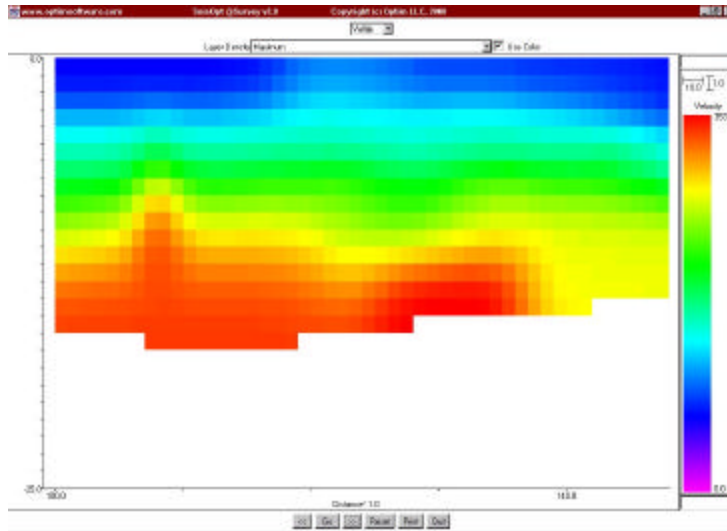


The Optim analysis is a velocity optimization. It uses the first break picks to repeatedly forward model the subsurface. Numerous test velocity models are created, through which travel times are calculated and compared to the observed data. The model that has the smallest discrepancy with the observed data is selected for the final output.

A minimum of 5 shots is recommended to provide sufficient data points for the analysis.

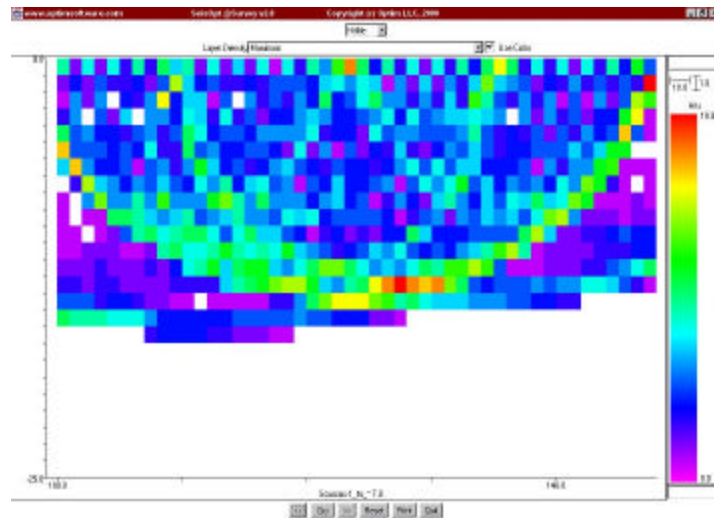
6

The Vel File: the final velocity model



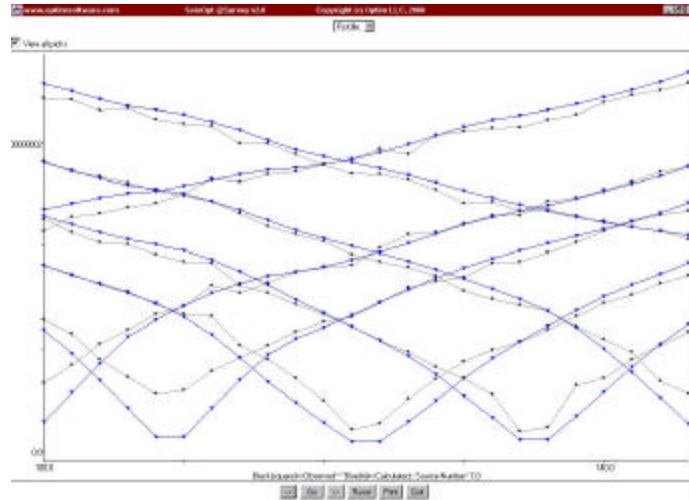
7

The Hit File: ray coverage, or the number of times each cell was sampled, of the final velocity model



8

The Pick File: comparison of the observed and calculated first break picks of the final velocity model



9



- **SIPQC comes with all Geometrics seismographs and seismograph controller software.**
- **SeisOpt@Survey comes with all Geometrics Windows-based seismographs and seismograph controller software.**
- **Full versions of both programs for more in-depth analysis are also available for demonstration and purchase.**
- **OYO's SeisImager/2D refraction software and WinSeis Lite or Turbo by the KGS for reflection data processing are also included with Geometrics Windows-based seismographs and seismograph controller software (see separate datasheets).**

Please contact Geometrics for more information.

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10