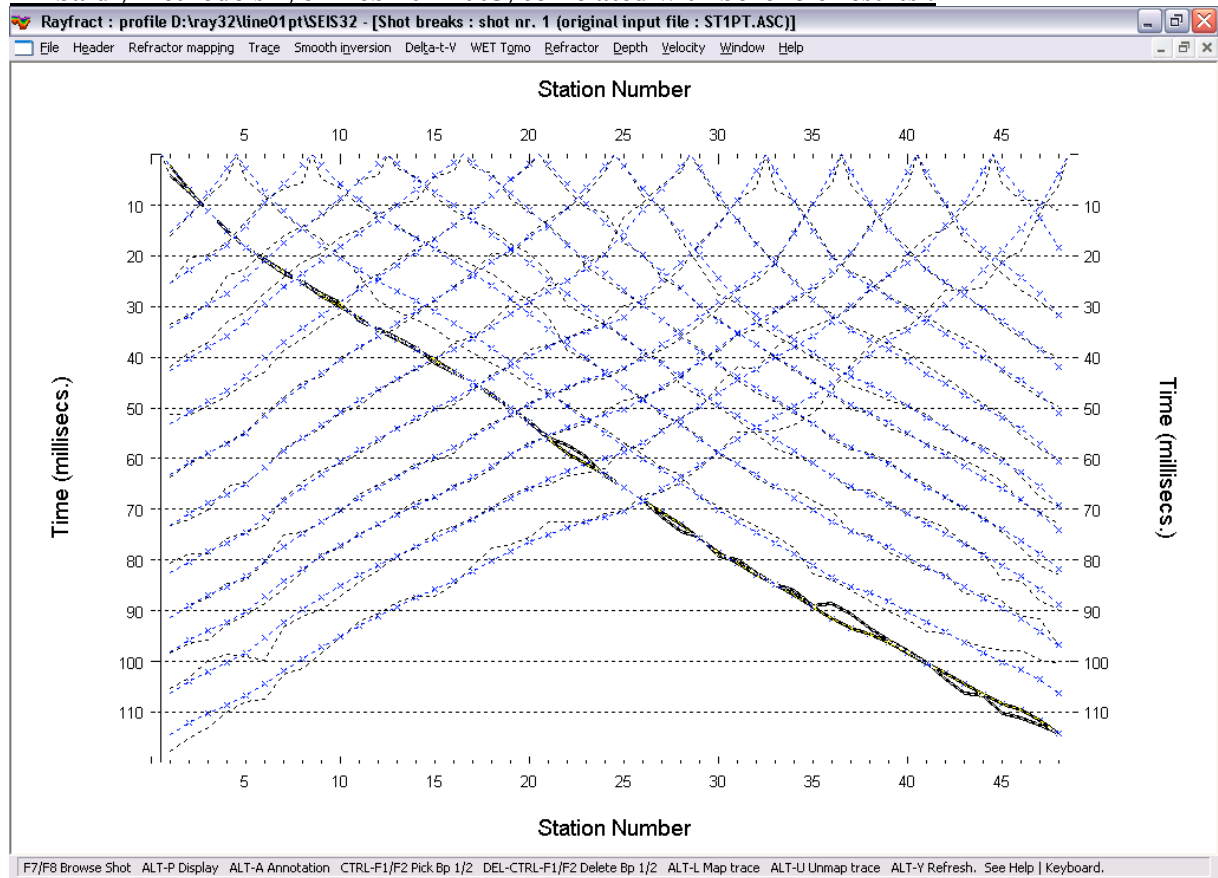
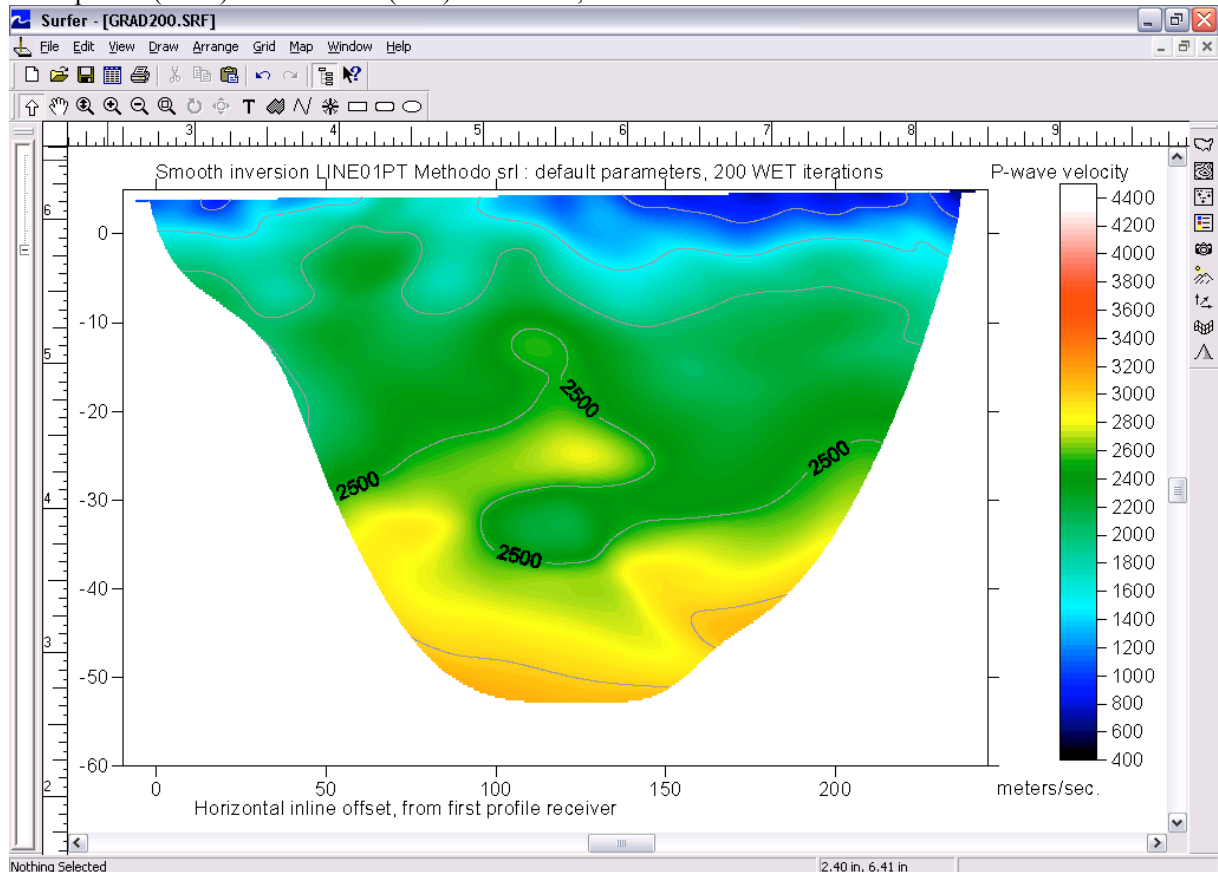


Cavity imaging with Rayfract™ 2.61 : Smooth inversion LINE01PT as sent by Dr. Andrea Anibaldi, Methodo srl, on Feb 10th 2005, correlated with borehole results :



Fit of picked (black) with modeled (blue) traveltimes, after 200 WET iterations.



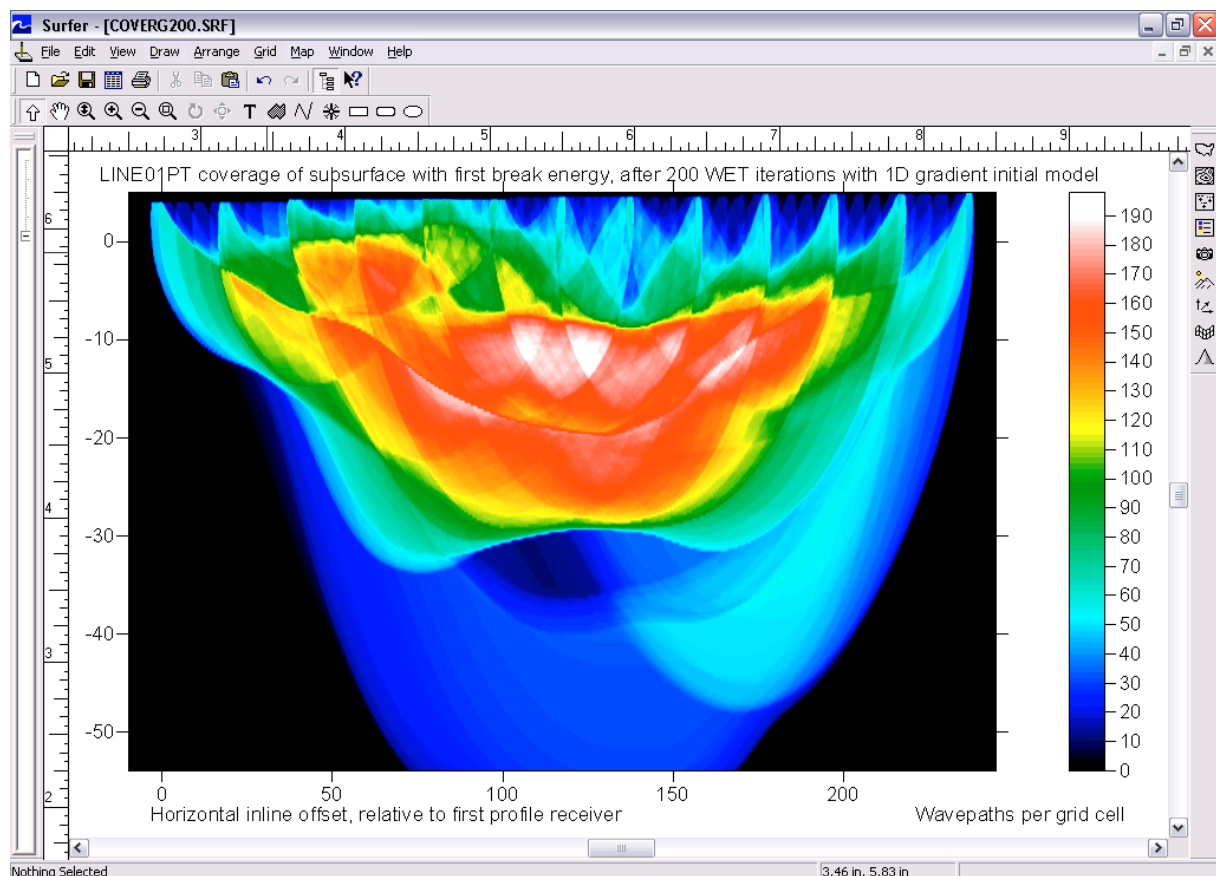
WET output based on 1D gradient initial model, after 200 WET iterations. Velocity limited to max. 400 m/sec.

As described by Dr. Anibaldi, „boreholes show one big cavity at progressive 120-125 meters, at depth from 33 to 48 meters below ground level“, corresponding to absolute elevation of -29 to -44 meters. Above tomogram nicely images this cavity.

The maximum velocity was limited to 4,000 meters/sec., per parameter setting. 200 WET iterations took about 70 minutes, for 13 shots into 48 receivers i.e. 624 traces. All other Delta-t-V and WET settings were left at their default values. Processing was done on a Toshiba Satellite A40 portable, with an Intel Celeron processor running at 2.7 GHz and 512 Mbytes of RAM. To invert the data, please proceed as follows :

- download the original first breaks file LINE01PT.ASC from <http://rayfract.com/tutorials/line01pt.zip>
- LINE01PT.ASC contains receiver elevations (in column 5) and shot elevations (in column 6).
- create a new profile database named LINE01PT, with a „Station spacing“ of 5 meters. See our manual <http://rayfract.com/help/manual.pdf> chapter 1.1.
- select File|ASCII Column Format... to change Column 5 from the default „No value“ to „Receiver elevation“, and Column 6 to „Shot elevation“ settings. Hit ENTER to confirm.
- import the LINE01PT.ASC file as described in chapter 1.11.
- invert the data with Smooth inversion|WET with gradient initial model. Proceed the same way as lined out in chapter 1.14, for Automatic Delta-t-V and WET inversion.
- select WET Tomo|Interactive WET tomography.... Click on field „Number of WET tomography iterations“.
- press the END key. Press the BACK SPACE key (bold left arrow symbol, above ENTER key) repeatedly until the field is empty. Now enter the new value of 200.
- set field „Maximum valid velocity“ to 4000 m/sec.
- start the 200 WET iterations with button „Start tomography processing“.

Coverage of subsurface with first break energy, after 200 WET iterations with 1D gradient initial model :



We would like to thank Dr. Anibaldi for making available this crucial data set, correlated with borehole results.

Siegfried Rohdewald
Intelligent Resources Inc.

Vancouver, February 15th 2005

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