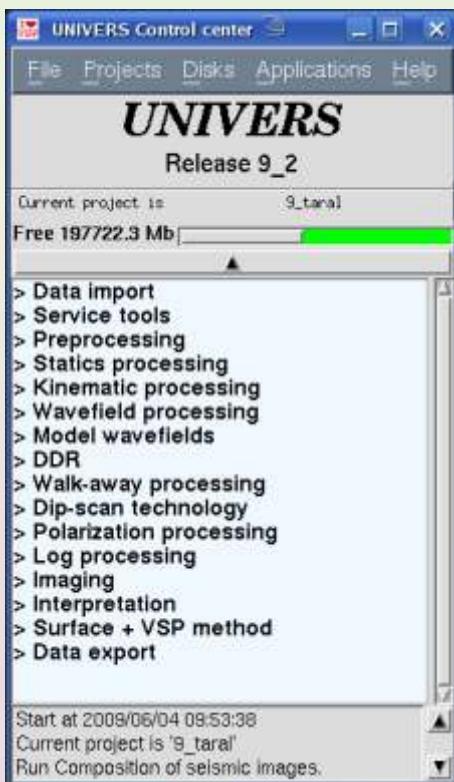




# UNIVERS seismic processing and interpretation software



## General procedures

- Model based geometry designing
- Preprocessing of LOG data
- POLYCOR static correction
- Signal processing
  - noise attenuation
  - model based iterative wave separation
  - filtering
  - polarization
  - correlation of seismic events
  - signature and statistically consistent deconvolution
- Velocity inversion
- Ray modeling and migration
- Finite-difference modeling and vector migration
- Inversion
- Interpretation

## Applications

- Checkshot VSP
- Zero-offset and offset VSP
- Walkaway and 3D VSP
- 2D/3D+VSP
- Surface seismic data analysis
- Tie of VSP, LOG and CMP
- Near-borehole interpretation
- VSP acquisition system design

## System platform

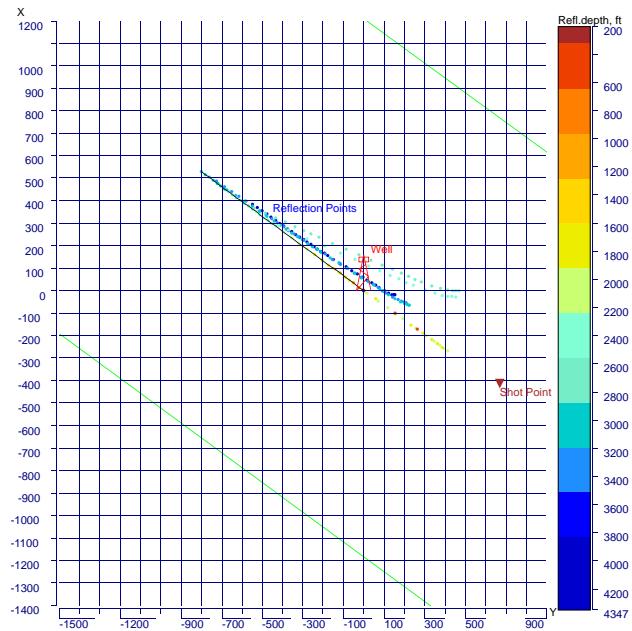
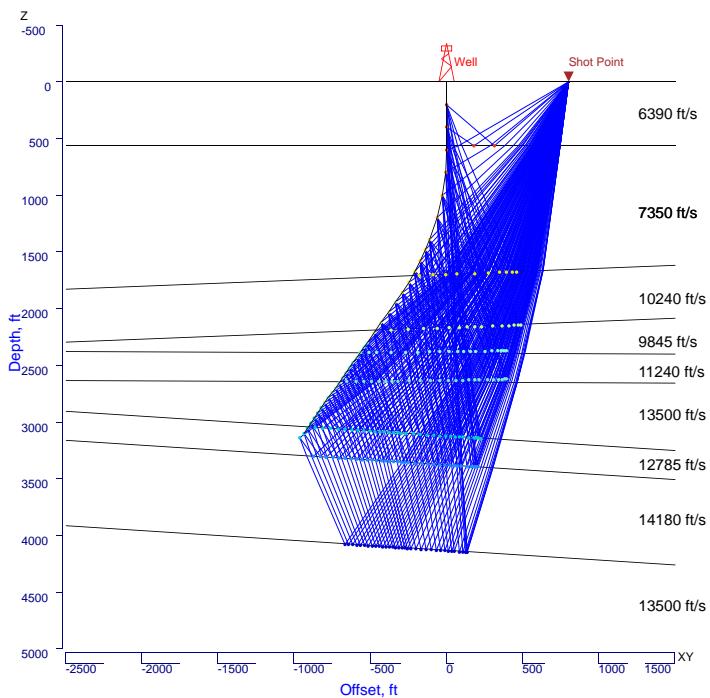
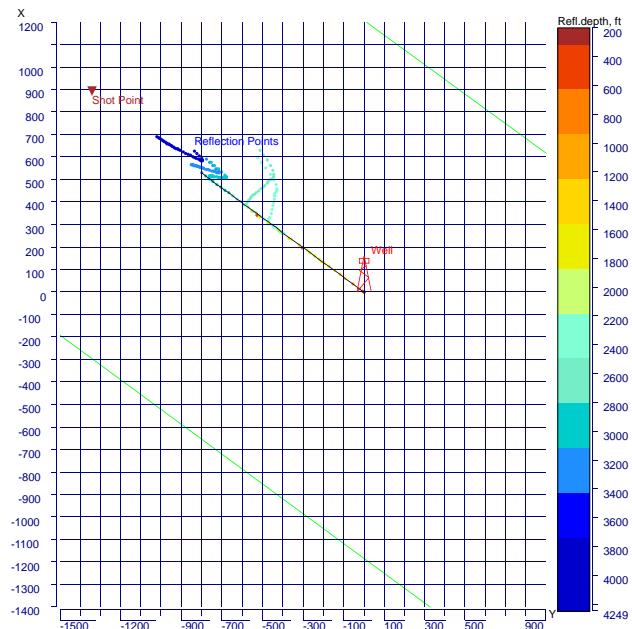
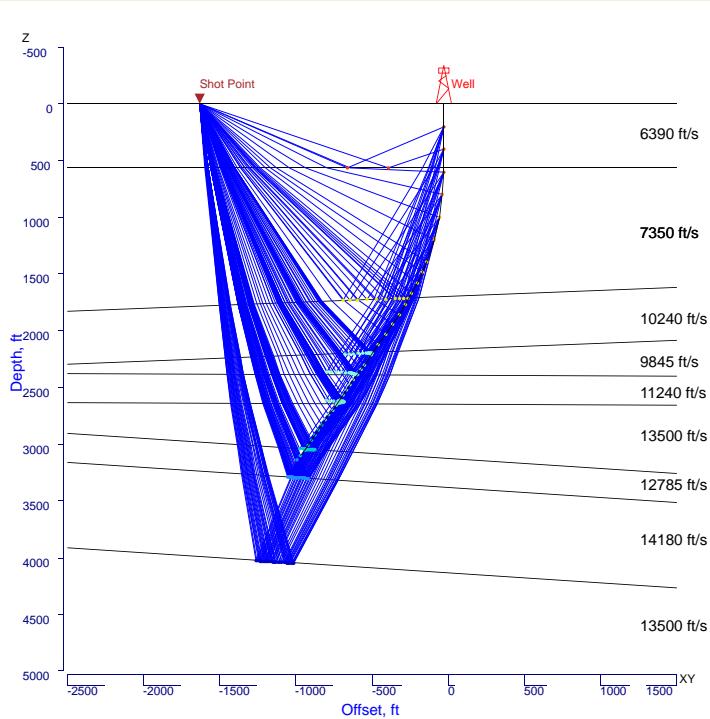
- Linux (IA32, AMD64), Solaris (SPARC) — main processing
- MS Windows XP — field processing and report graphics preparation
- Simple maintenance
- No need for special 3rd party software



# Acquisition system design

## Features:

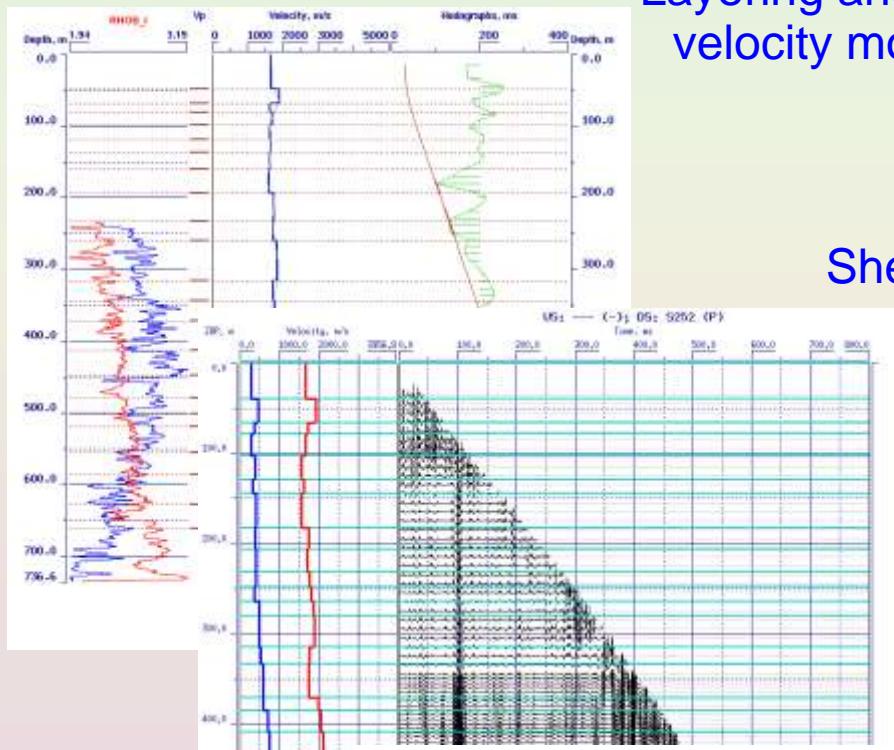
- Based on 3D velocity model
- Both ray tracing and synthetic seismic modeling
- Monotype and converted P/S reflections
- Arbitrary vertical slice and X-Y plane view





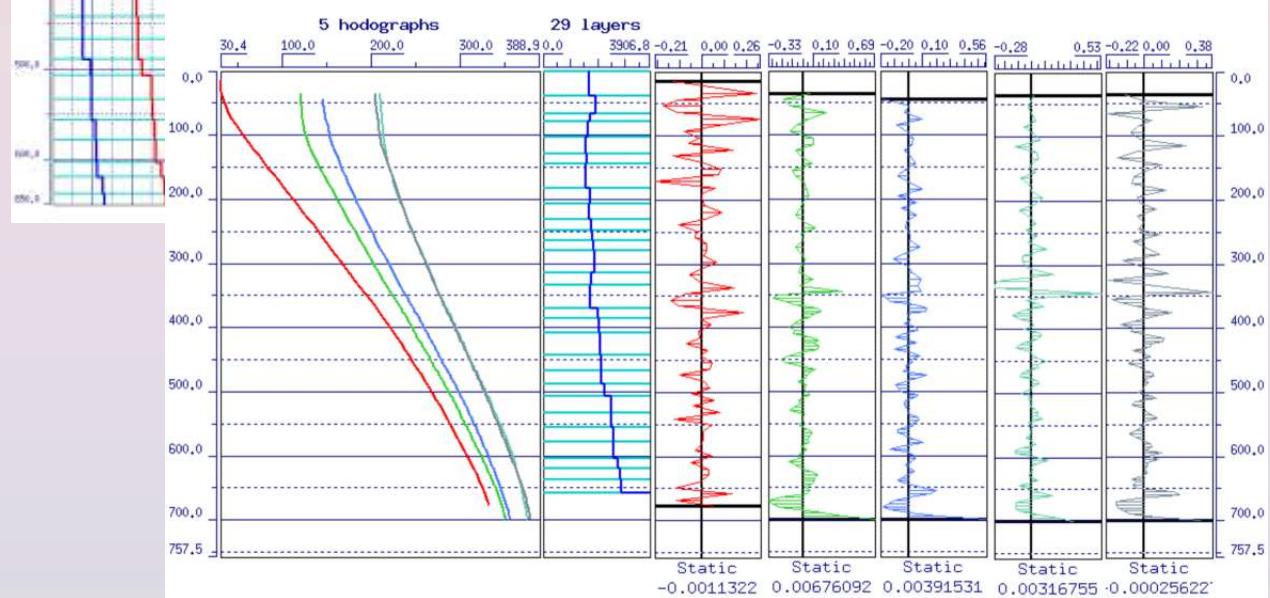
# Velocity model operations

Layering and zero offset velocity model tuning



Shear velocity tuning

Inverse kinematic problem solution for multiple offsets



## Further objectives:

- Automatic wave separation
- Imaging
- Tie to LOG and CMP data
- 2D velocity model
- 3D velocity model



## Automatic wave separation

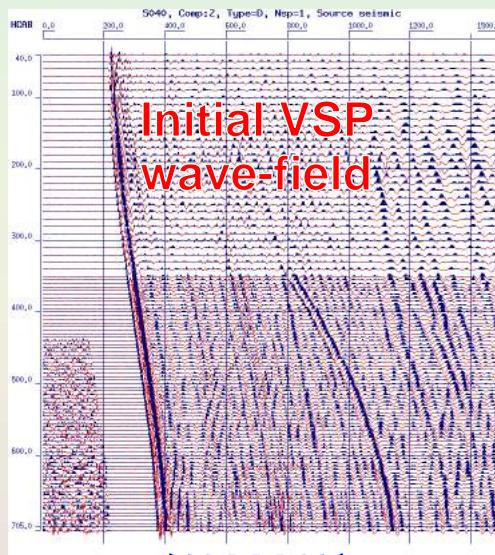
### Specifics:

- Model-based
- 3C
- Adaptive
- Iterative
- Noise aware
- 2D/3D VSP

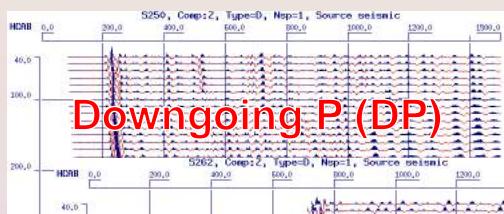
Initial VSP  
wave-field

### Your benefits:

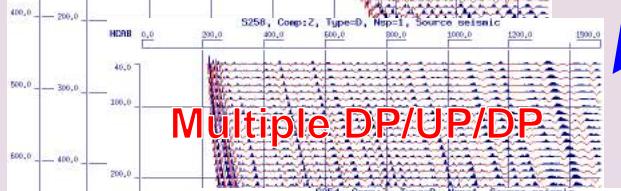
- Precise wave separation
- Easy to use
- Fast processing
- Ultimate results
- Model check



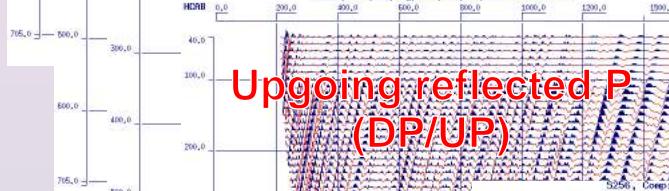
One Step



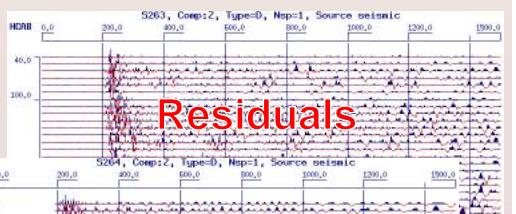
Downgoing S (DS)



Multiple DP/UP/DP

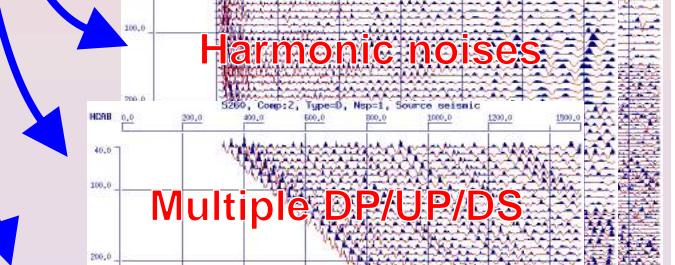


Upgoing reflected P  
(DP/UP)



Residuals

Harmonic noises

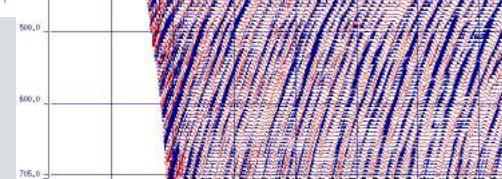


Multiple DP/UP/DS



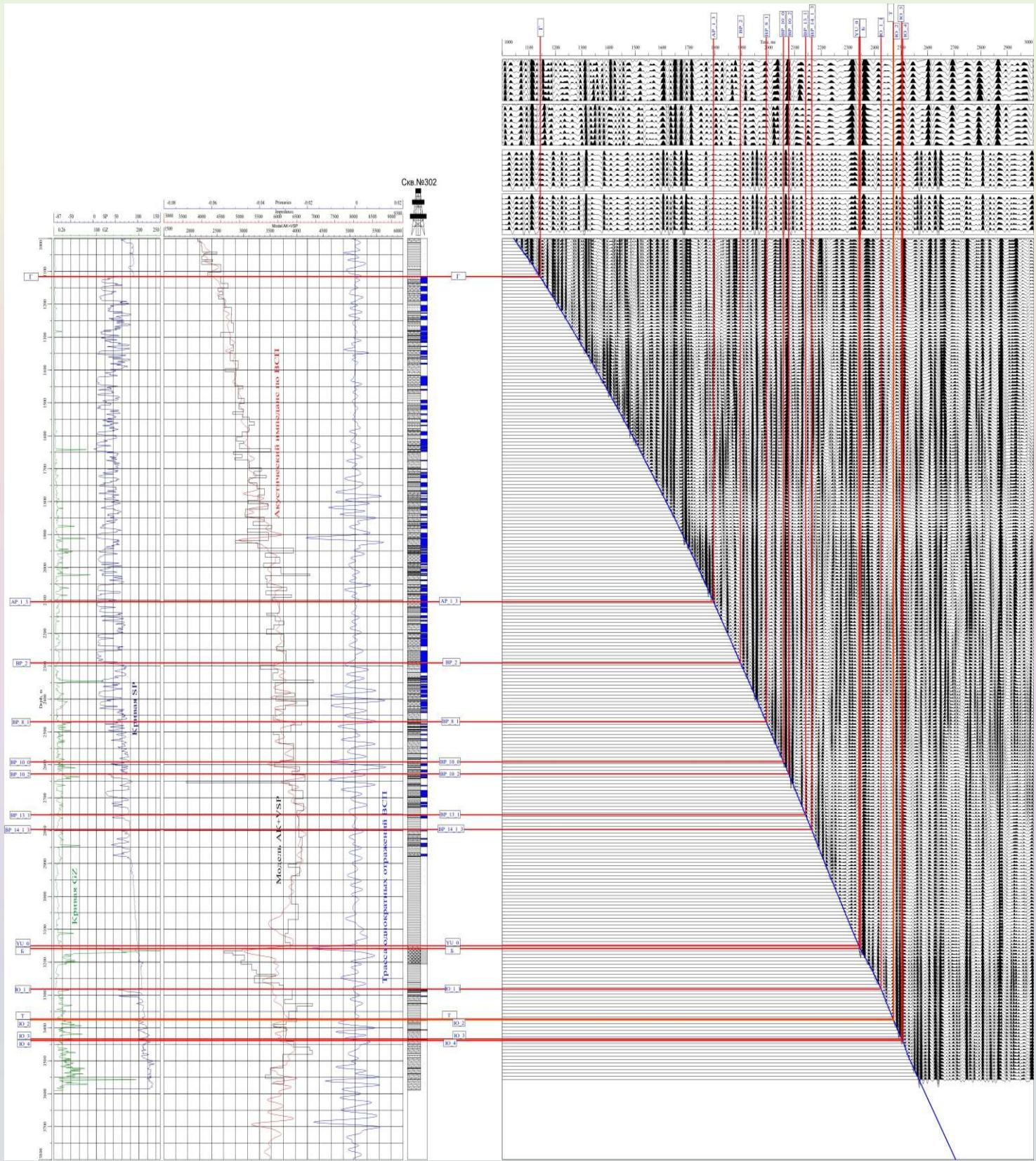
Dowgoing converted  
P/S (DP/DS)

Upgoing converted  
P/S (DP/US)

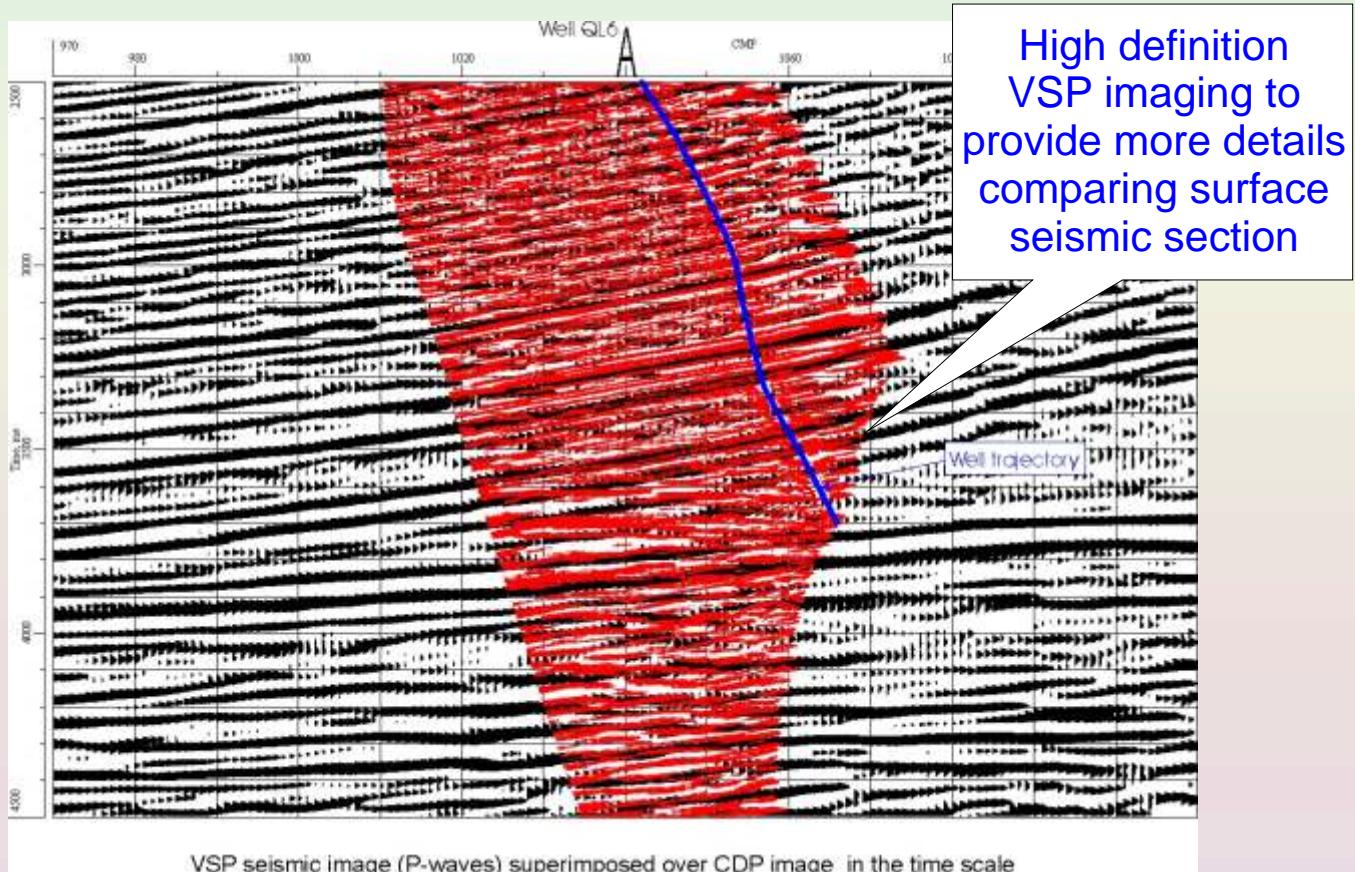




## Precise tie of CMP section to LOG via VSP



# Imaging and interpretation



Horizons correlation, map composition with horizons and their attributes

