合成地震记录

Tie well to seismic

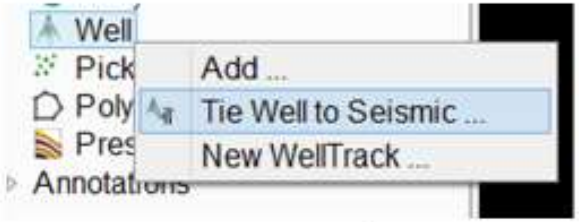
Li

Exercise objective:

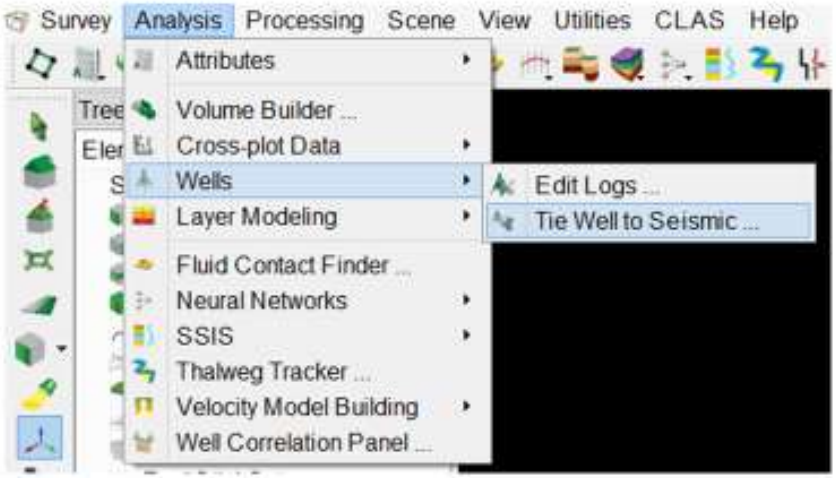
Tie a well to the seismic and extract a deterministic wavelet.

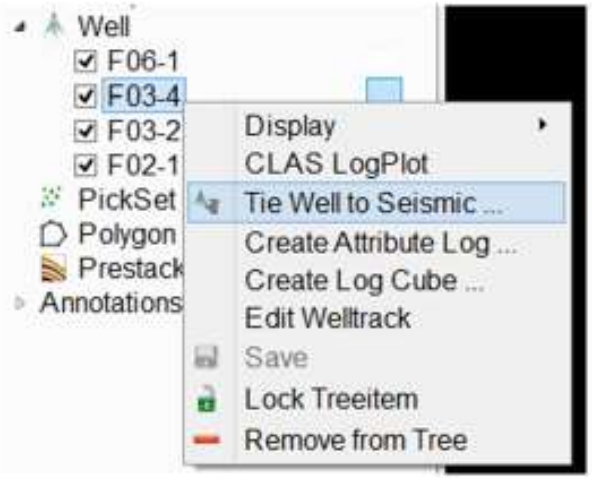
Workflow:

1. **Right-click** on Well in the tree > Tie Well to Seismic…

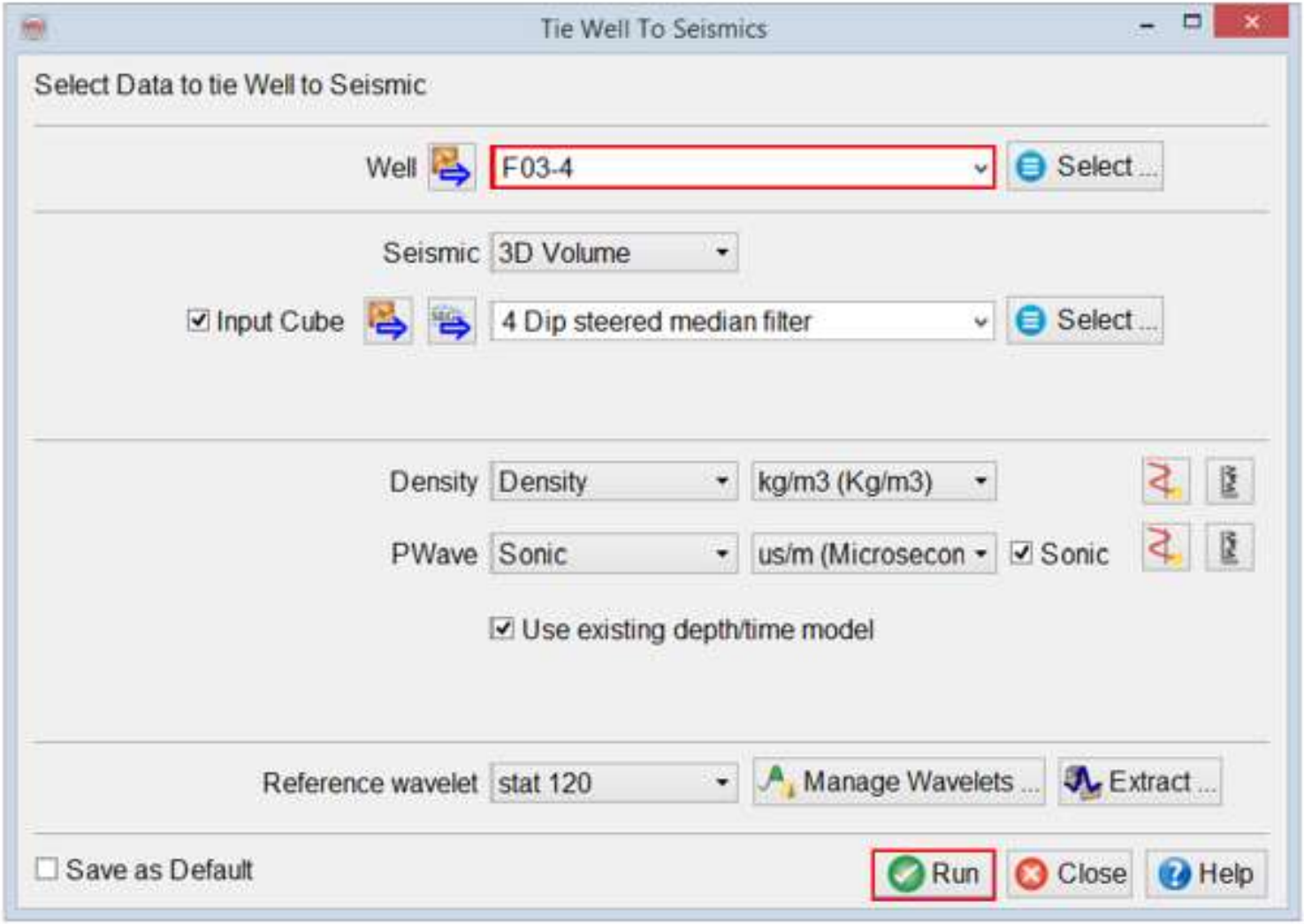


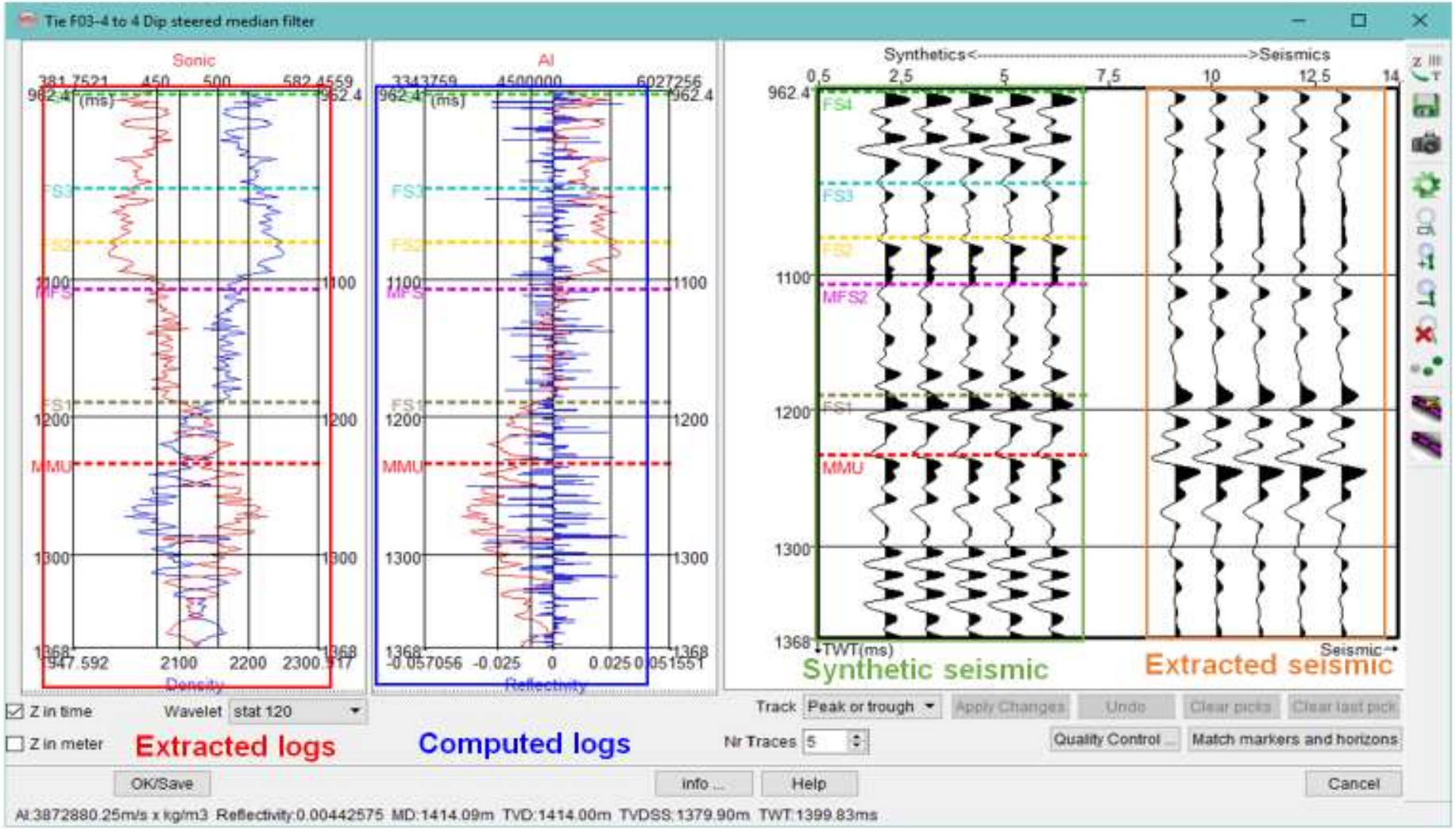
Tip:
Well to seismic tie module can be also launched via:
- Analysis > Wells > Tie Well to Seismic…
- Right-click on a well name in the tree > Tie Well To Seismic…





2. In the Tie Well to Seismic window: **choose** F03-4 well, **check** the options to be as shown below and **click** Run.



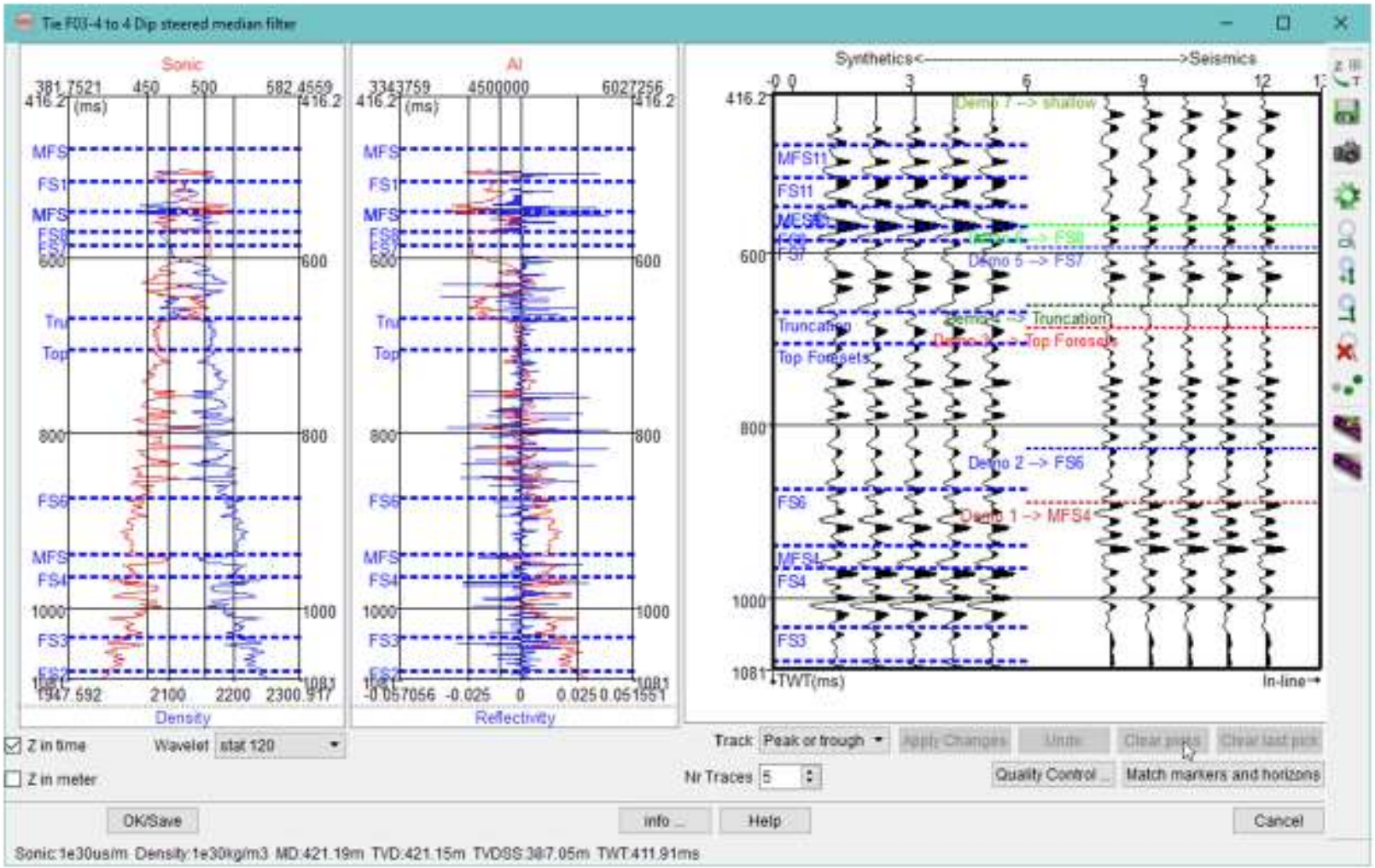


Markers are loaded by default.

地质marker从何处来的？

3. **Click** on  icon to load already mapped horizons to be displayed on the extracted seismic traces: **Check** horizons from *Demo 1* to *Demo 7* and **click** OK.

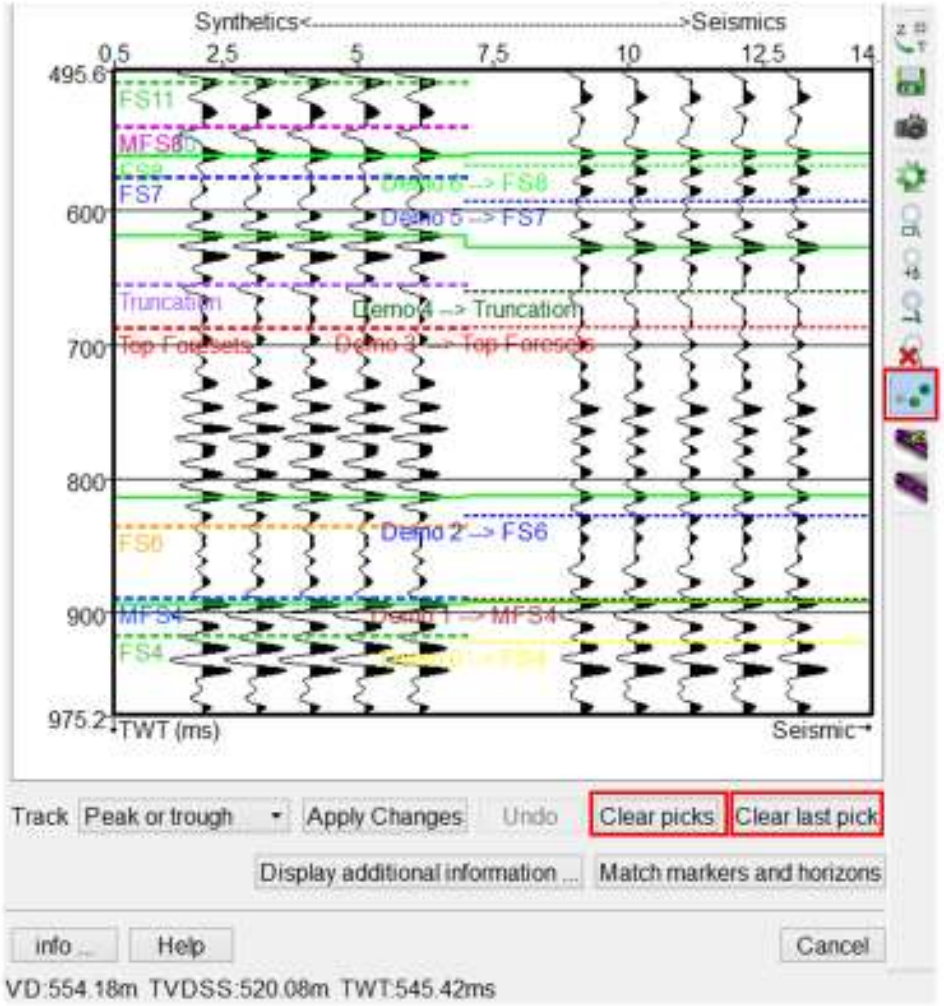
4. **Zoom in** using middle-mouse scroll button and **pan** by pressing middle-mouse button: **hold** and **drag** up/down until you have a display to pick matching events.



5. **Activate** pick mode with the icon 

6. **Pick** matching events on the extracted seismic then synthetic traces (or synthetic then extracted seismic).

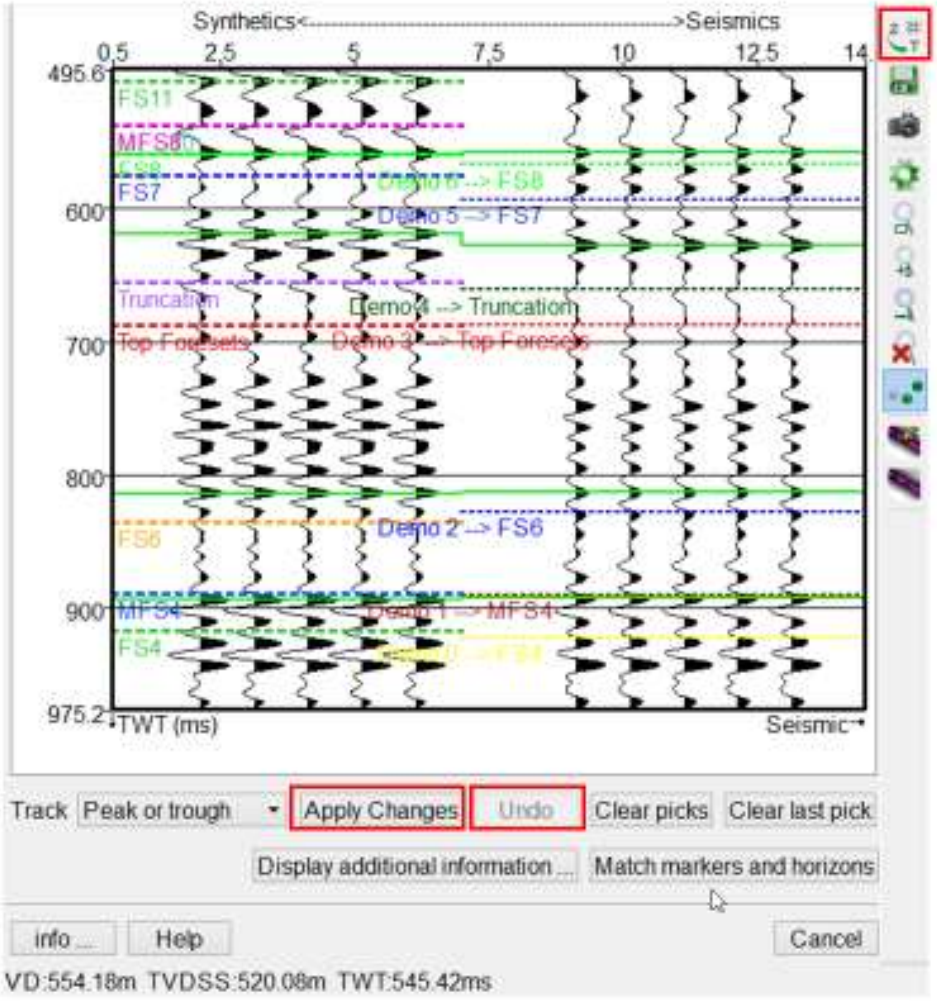
7. Optionally, to **change** your picks: **click** Clear picks or Clear last pick if needed.



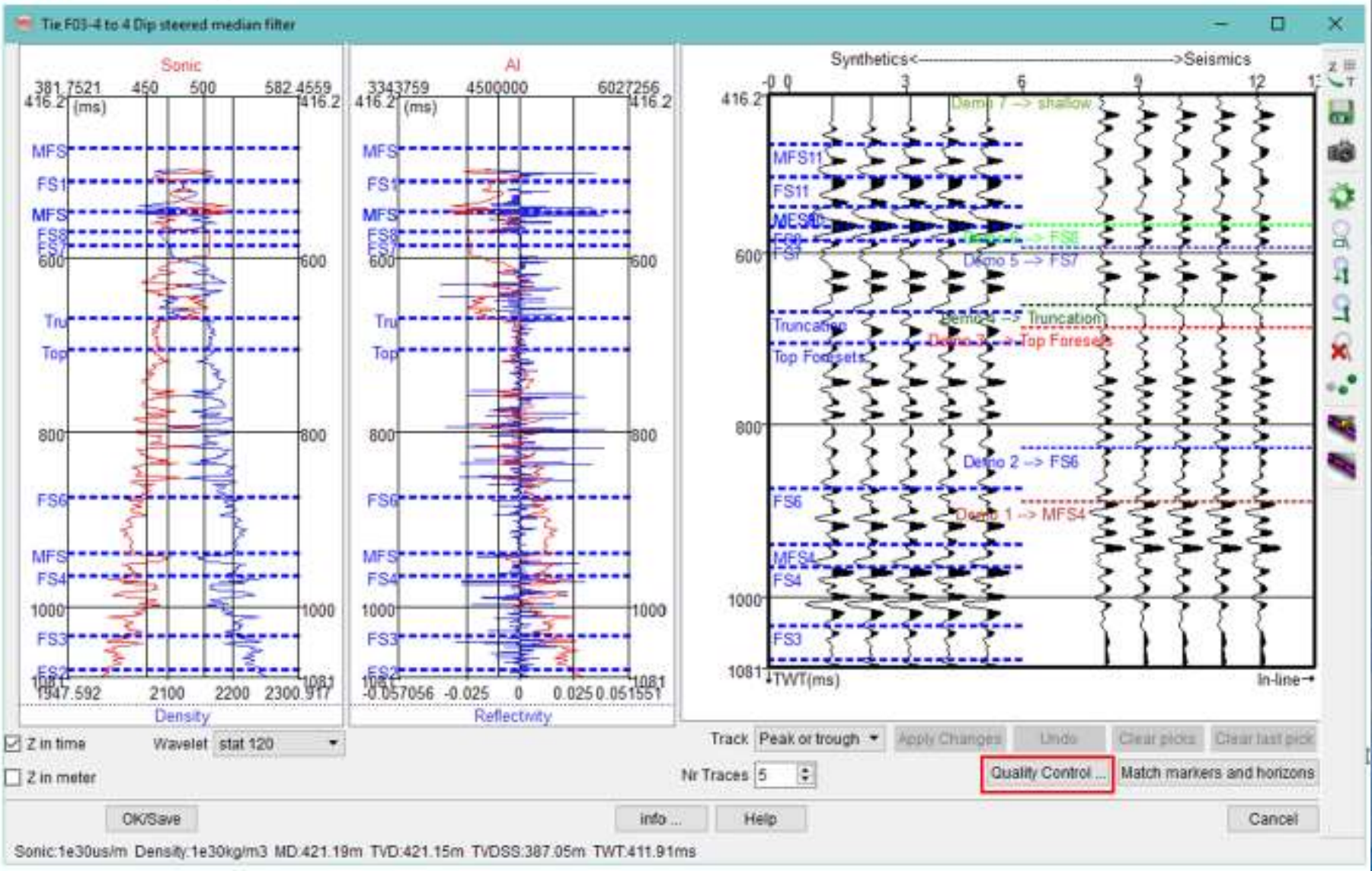
8. After picking the events, **click** Apply Changes to reflect the changes.

9. If not satisfied with the result, **click** Undo to revert the most recent step.

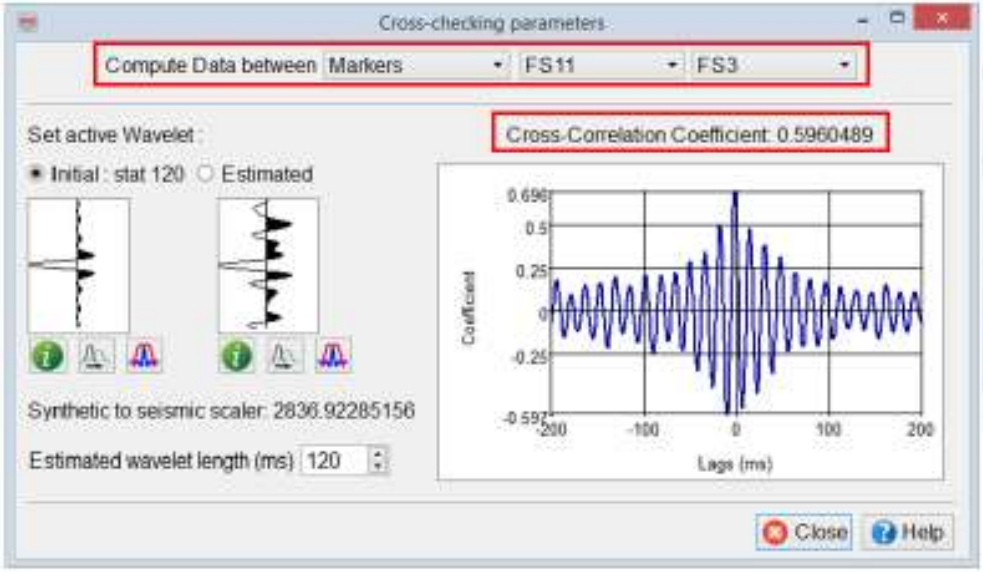
As only the previous step can be reverted using Undo button, it is recommended to save intermediate T/D (Time/Depth) curves by clicking on the Z T icon and exporting to a text file.
Saved T/D curves can be (re-)imported at any time via the same window or via Well Manager.



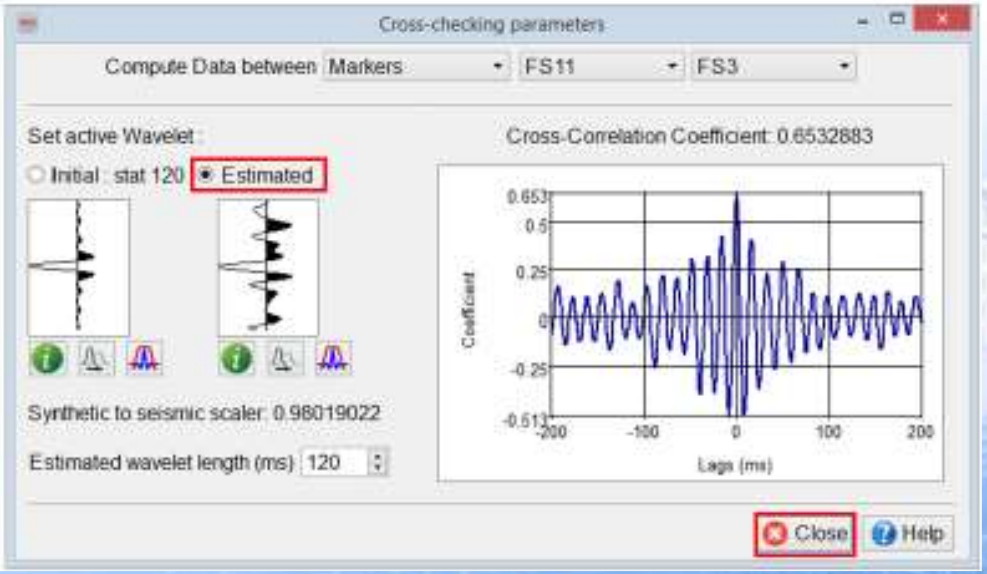
10. Click on Quality Control to check the Cross-Correlation Coefficient.



11. **Choose** Compute Data between Markers and **select** top and bottom markers, for example FS11 and FS3, to define a window of interest.
Note that Cross-Correlation Coefficient, the graph and the Estimated wavelet are immediately updated.

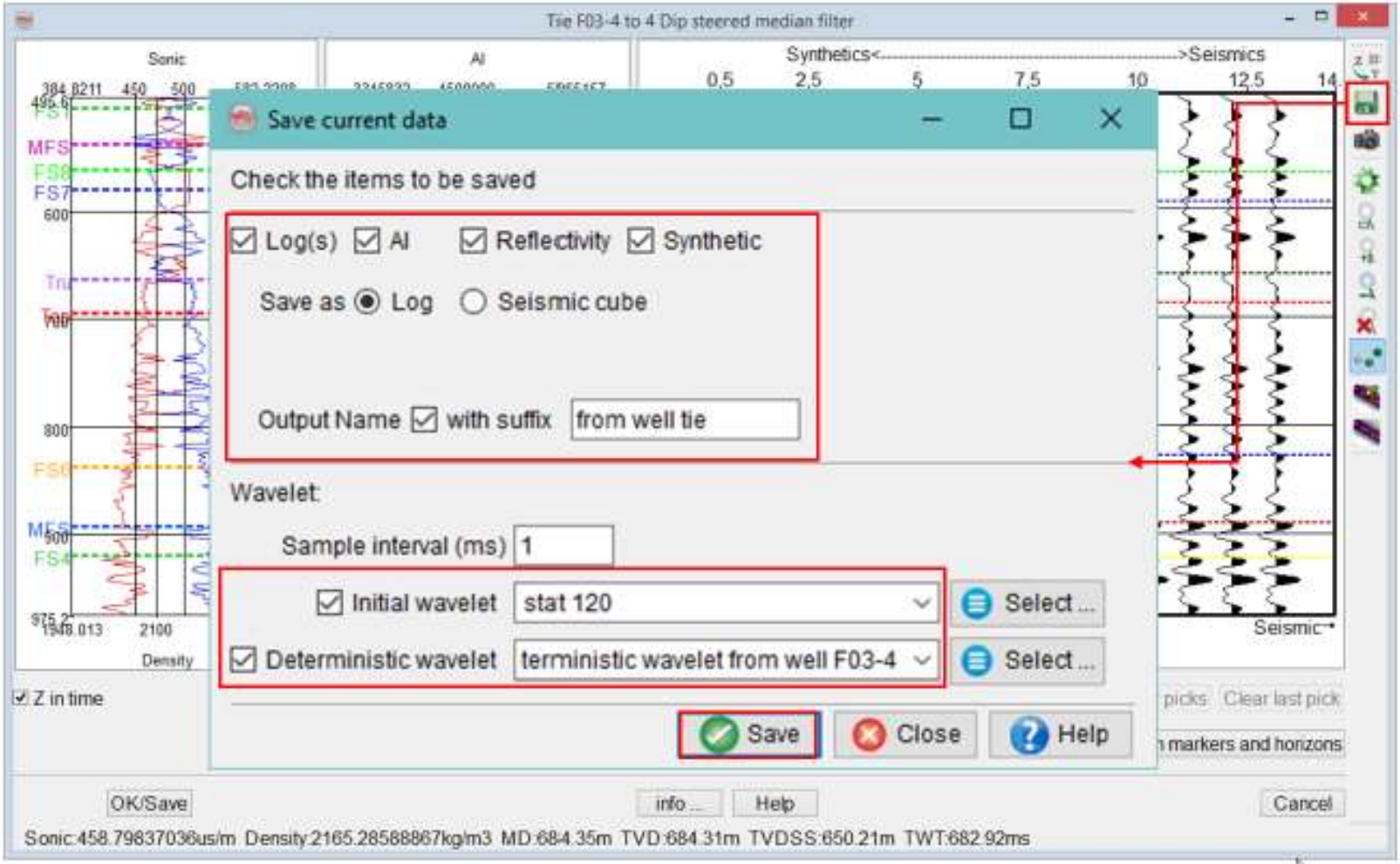


12. Optionally, **switch** to Estimated (deterministic) wavelet option: **see** that the synthetic traces change in the main Tie Well to Seismic window. The scaler applied to the seismic has also changed and should be close to 1.

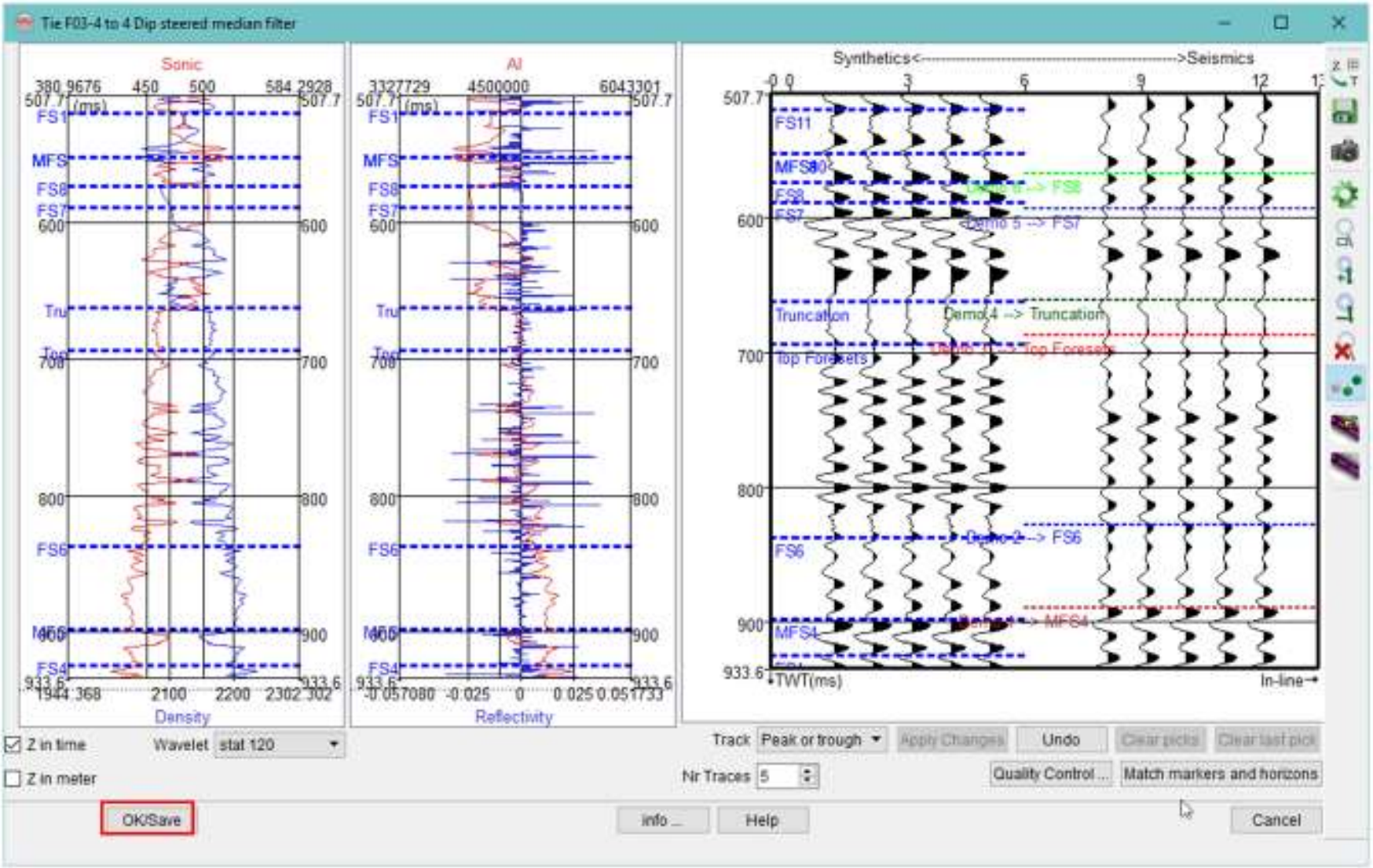


Click on icon to save:

- Acoustic Impedance, Reflectivity and Synthetic as well logs or as seismic cubes.
- The initial (loaded) and/or estimated wavelet.



13. **Click** on OK/Save button to save the T/D curve as an active T/D model of the tied well.



Well-tie-Python的脚本程序：

#Assigning geological markers and its depths

markers = ('Fm. Embore', 'Fm. Ubatuba', 'Mb. Goitacas', 'Mb. Retiro', 'Mb. Itabapoana', 'Mb. Coqueiros')

depths_markers = (574.292, 1983, 2002, 2396, 2420, 3344)

Marker里面的地层名称，是从哪来的？

对应的深度信息，从哪来的？

层位解释得到？

可参考：petrel-合成地震记录.pdf