



Crosshole Tomography (CT) Data Examples

Crosshole Tomography (CT) data quality is assessed in the same way that Crosshole Sonic Logging (CSL) data quality is assessed. Good quality data consists of waveforms that have clear breaks either up or down, clearly indicating the wave's arrival. The data should not be clipped by over gaining either. Other than these two things, the data must be acquired in a precise and meticulous fashion in order to optimize the information in the data.

Once the data is processed in the CSL2 software, it is exported into GeoTom[®] for model generation and inversion. The data is then thoroughly processed in GeoTom[®] and exported to Slicer Dicer[®]. At this point, depending on the type of model generation in GeoTom[®], either two dimensional slices (2D) or three dimensional (3D) volumes may be generated. Shown are three examples: 1.) a 2D slice, 2.) a CSL log, and 3.) a 3D volume.

CROSSHOLE TOMOGRAPHY

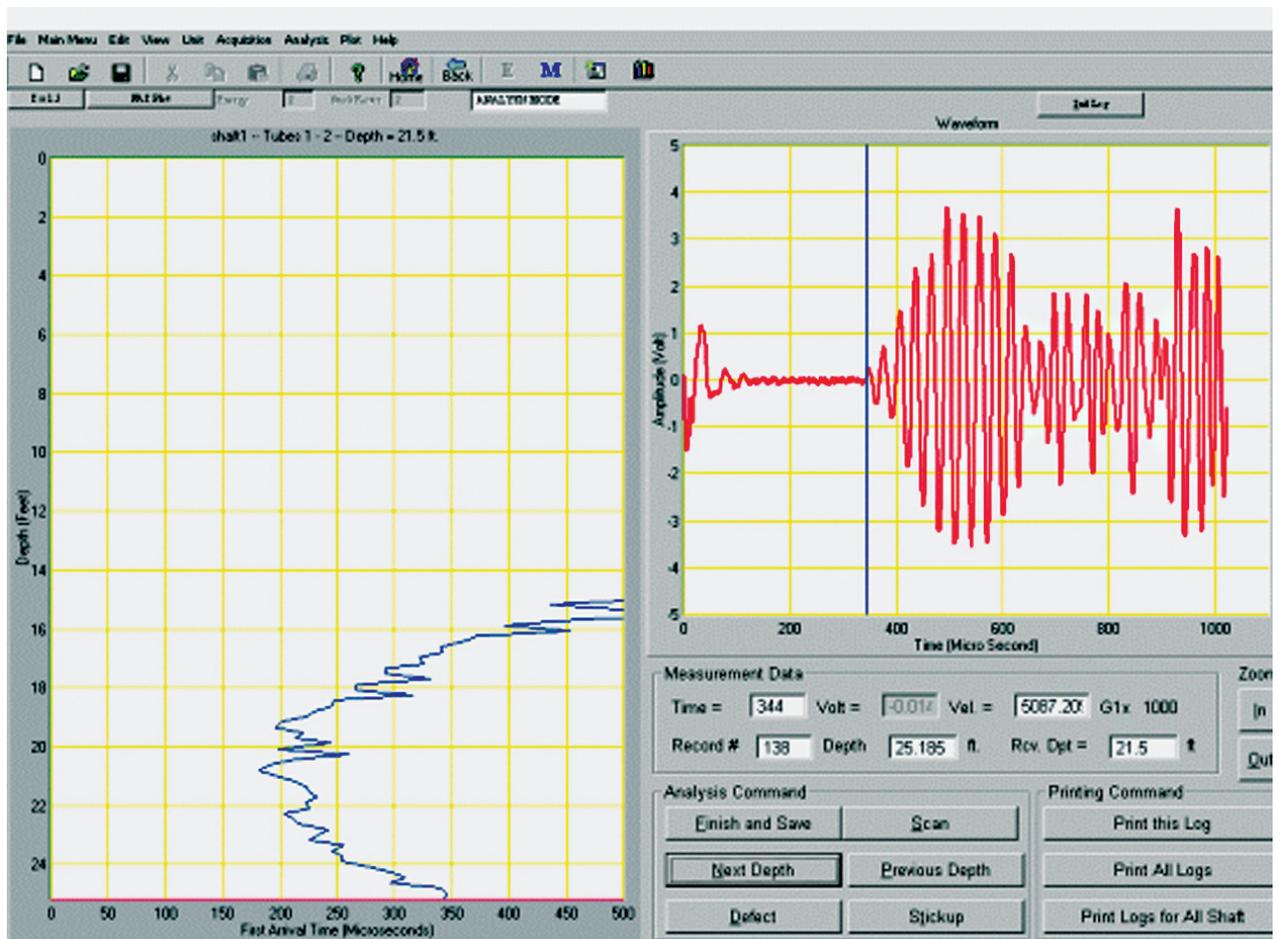


Figure 1. CT results showing a 2D Slice



The example on the left shows a CSL log. It is evident in the log that there are three general depths containing defects. The example on the right shows a 2D slice through the CT data taken on the same shaft. It is evident that the same three areas appear in the tomography data. It should be noted that in the CT data set velocities 10,000 ft/sec and greater have been made transparent so that the plot shows only the anomalous zones.

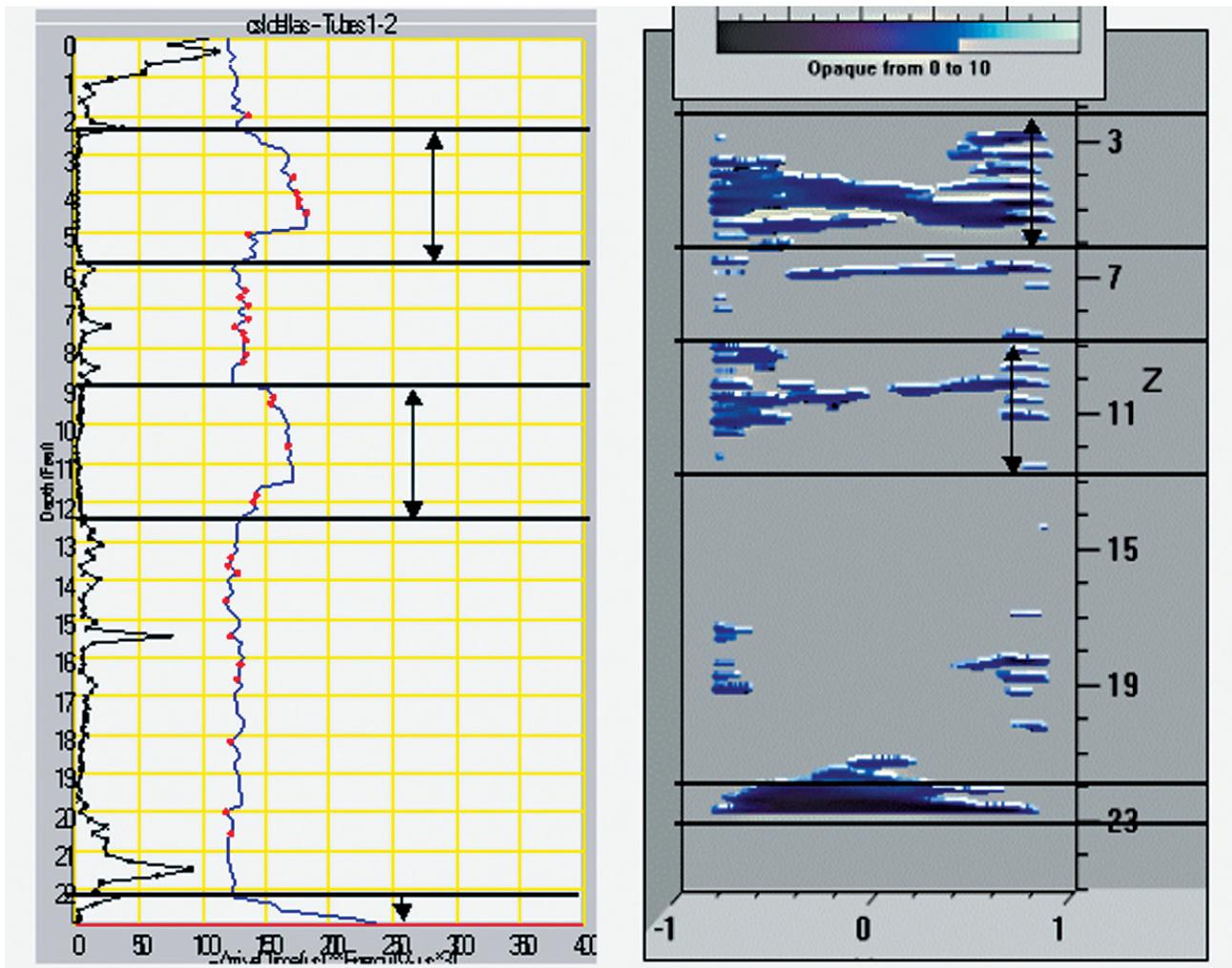


Figure 2. Example CSL Log on the left, example on right shows a 2D slice through the CT data taken on the same shaft



The two plots below are examples of 3D CT data. The plot on the left displays all of the velocities found in the CT data, while the plot on the right shows only those velocities below 10,000 ft/sec. This was done to identify the volume of the defects found in the CSL and 2D CT data. It can be seen that the 3D data not only supports both the CSL and 2D CT data, but adds insight to the volume of the defects.

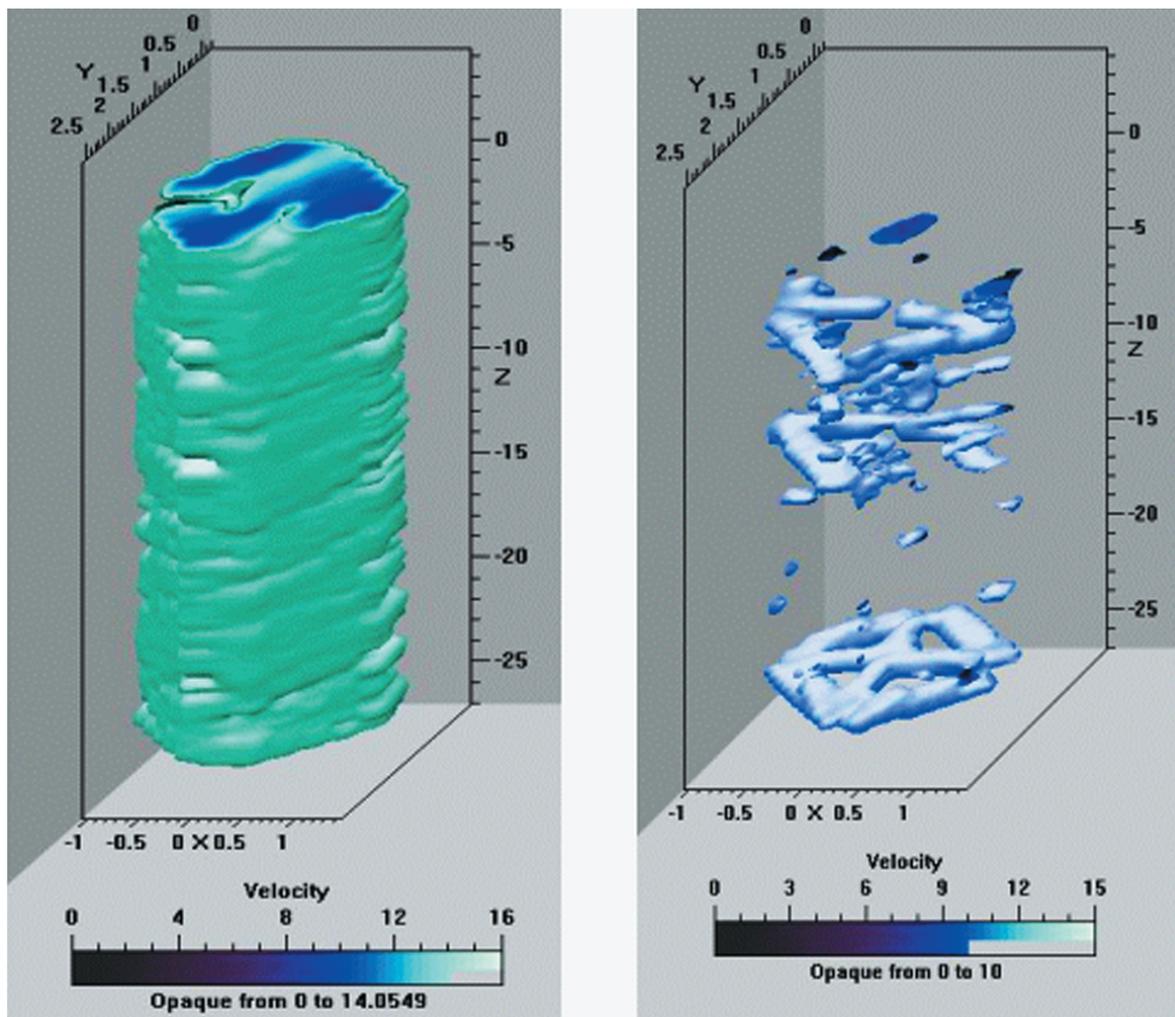


Figure 3. CT results displayed as 3D data, providing more insight for volume of defects

