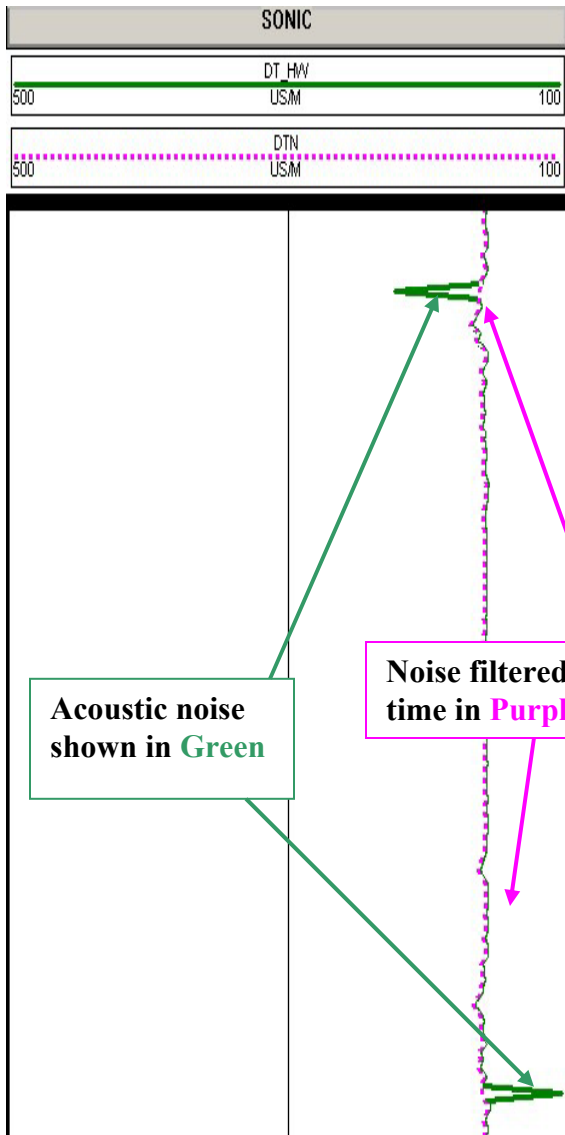# LOG NOISE FILTERING AND DATA RECONSTRUCTION

Noise filtering

Acoustic (compressional and shear) travel time measurements can sometimes have random noise due to the logging environment, instrument electronic issues, and/or survey speed. Wallace International has proprietary methods and software that identifies noise and automatically corrects the problem. See example below.

Data reconstruction

Missing or bad data can occur due to first reading recordings, run breaks, incomplete digitizing and/or other logging related issues. When it is absolutely necessary to have a complete survey, Wallace International has the tools and the know-how to develop correction models using other valid log measurements with multi-linear regression modeling and/or neural net processing. See example below.

Acoustic noise shown in Green

Noise filtered travel time in Purple

COEFFICIENT OF MULTIPLE CORRELATION = 0.9119

TOTAL NUMBER OF DATA POINTS USED = 9395
REFERENCE CURVE = DT
CALIBRATION CURVES = NPHI, ILD

$$DT = 182.486 + 345.351*NPHI + -9.10482*Log10(ILD)$$

"First reading" of recorded acoustic travel

Synthetic acoustic travel time