Controlling Blast Vibration Effects With On-Site Analysis of Single Hole Signatures "A New Approach"

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ABSTRACT

Computer analyses of single hole signatures are often used to help blasting operators predict the type of ground vibration effects that may be produced from production blasts incorporating various delay intervals. Frequency analyses of single hole waveforms and subsequent multi-hole waveform simulations can allow an operator to determine the best type of delay intervals to use in order to minimize low frequency ground vibrations.

Due to recent advances in computer technology and digital seismographs, field analysis of single hole shot recordings and forecasting of the seismic effects that could be generated by multi-hole shots is now possible. This type of on-site information can be invaluable to operators that need to make immediate changes in their blast designs to minimize the occurrence of low frequency vibrations. Single-hole seismic studies were conducted by White Industrial Seismology, Inc. at the Old Ben Coal Company #2 operation near Petersburg, Indiana. On-site computer analysis of the recorded waveforms provided Old Ben personnel with immediate insight into the type of seismic effects they could most likely expect to see produced from various multi-hole shot designs.