

BOREHOLE STUDY OF PRECOMPRESSION RESISTANCE IN DETONATORS AND EXPLOSIVES

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ABSTRACT

The desensitization of an explosive column by the action of a previous detonation (adjacent borehole, deck or detonating cord) is a vital concern to the explosives industry. Previous reports to this symposium and in other places have addressed this issue. However, this work has been mainly concerned with model or simulated conditions. No systematic study has appeared that utilizes an actual borehole environment. Thus the relation between this work and expected field performance is somewhat uncertain. The present paper attempts to partially resolve this difficulty.

Results of a series of tests conducted in a borehole environment that can be directly related to production situations are presented and discussed. Data involving various product (water gel, emulsion, semi-gelatin dynamite) and detonator types as well as combinations of each are summarized. Several conclusions can be drawn from this study that are of importance to the explosives and mining industry. Among these are the verification of earlier simulation work, the importance of the detonator and the realization that the end user does have a measure of control over blasting results by a careful choice of the proper combined explosive and initiation system.