

Factor Analysis-Based Optimal Selection of Rock-Breaking Bit Applied in Deep Layer of Songliao Basin

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Abstract

Correctly choosing rock-breaking bit is critical in oil drilling. The optimal model of selecting a bit has been established based on the Factor Analysis Theory. Through selecting primitive variables, and using SPSS (Statistical Package for the Social Sciences) to get factor loading matrix, factor rotation and factor score, we have reasonably evaluated and optimized the selection of rock-breaking bits applied in deep layer drilling of Songliao Basin. The calculated results are consistent with the observation from actual applications. It indicates that the method studied here is reasonably reliable and valuable for broader applications.

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