

عنوان مقاله:

Optimum Selection of Drill Bits for Drilling Operations in Sarvak and Asmari Formations Using a Fuzzy Multiple Criteria Decision-Making Approach

محل انتشار:

مجله بهینه سازی و مدل سازی فازی، دوره 1، شماره 1 (سال: 1397)

تعداد صفحات اصل مقاله: 10

نویسندگان:

Arash Ebrahimabadi - *Department of Mining, Qaemshahr Branch, Islamic Azad University, Qaemshahr, Iran*

Siavash Moradi - *Department of Petroleum Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran*

خلاصه مقاله:

Proper decision making in drilling bit selection issue may contribute to drilling efficiency and considerable cost reduction. Since the bit selection is a Multiple Criteria Decision-Making (MCDM) problem, MCDM techniques are the most powerful approaches to be applied in such cases. In this study, among MCDM approaches and with respect to great accuracy and validity of results, fuzzy TOPSIS method is utilized for optimum bit selection for drilling operations in Sarvak and Asmari formations in an Iranian oil field. With this regard, three types of bits (i.e. 517, 527 and 537) candidate in Asmari & Sarvak formations are analysed using fuzzy TOPSIS method to rank and prioritize the alternatives, leading to choose the best option. Considering bits operating in Asmari formation, similarity factors for bit types of 517, 527 and 537 bits found to be 0.479, 0.438 and 0.382, respectively indicating bit type 517 can be considered a proper option compared to other ones. Similarly, achieved results from application of fuzzy TOPSIS approach in Sarvak formation shows 0.5405, 0.5019 and 0.5622 values for 517, 527 and 537 bit types respectively, demonstrating the bit type 537 is the most appropriate alternative in Sarvak formation

کلمات کلیدی:

Bit Selection, Fuzzy TOPSIS, Asmari Formation, Sarvak Formation

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1043600>

