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| Book Name: | [**Engineering Research: Perspectives on Recent Advances**](https://www.bookpi.org/bookstore/product/engineering-research-perspectives-on-recent-advances-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4680** |
| Title of the Manuscript: | **Cuttings Removal in Eccentric Geometries: A Comprehensive Review of Hole Cleaning Mechanism, Affecting Parameters, and Assessment** |
| Type of the Article | **Book Chapter** |

**Special note:**

**A research paper already published in a journal can be published as a Book Chapter in an expanded form with proper copyright approval.**

**Source Article:**

**This chapter is an extended version of the article published by the same author(s) in the following journal.**

**Improved Oil and Gas Recovery, Vol. 8 (2024)**

[**https://www.smartscitech.com/index.php/IOGR/article/view/1317**](https://www.smartscitech.com/index.php/IOGR/article/view/1317)

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| PART 1: Comments | | |
|  | Reviewer’s comment | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This paper holds importance for the scientific community as it addresses a critical aspect of drilling operations - hole cleaning (HC) in horizontal and deviated wells, which are increasingly utilized to maximize reservoir contact and enhance hydrocarbon recovery. The paper provides a thorough review of the mechanisms, challenges, and influencing factors of HC, such as drilling fluid rheology, wellbore geometry, and operational parameters, which are essential for maintaining efficient and safe drilling practices. By evaluating innovative downhole technologies, modeling techniques like AI/ML and computational fluid dynamics (CFD), and experimental studies, the paper offers an understanding of HC optimization in complex well trajectories. It also highlights the limitations of current models and suggests future research directions, making it a resource for improving drilling efficiency and reducing operational risks. The comprehensive analysis and recommendations provided in this paper can guide the development of more effective HC strategies, contributing to the advancement of drilling technology and the sustainable exploitation of oil and gas resources. This work is relevant for researchers, engineers, and industry professionals seeking to enhance their understanding of HC dynamics and implement best practices in directional and eccentric well drilling. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | Yes, the title reflects the content of the article well. |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | In principle, the abstract of the article is quite informative. In the abstract, after the word "intelligent" I would add "(AI/ML)". Also, the authors can add, for example, the following phrase: "Key findings emphasize the critical role of drill pipe rotation, the impact of eccentricity on cuttings accumulation, and the effectiveness of nanoparticles in enhancing HC efficiency". |  |
| **Is the manuscript scientifically, correct? Please write here.** | Yes, from a scientific point of view the article is correct, the authors have cited numerous studies and provided a detailed analysis of the factors affecting HC, such as drilling fluid properties, wellbore geometry, and operational parameters. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | The references in the manuscript are generally sufficient and recent.  You can add very recent works on this topic, for example: https://www.researchgate.net/publication/365518464\_Drilling\_Parameters\_Optimization\_for\_Horizontal\_Wells\_Based\_on\_a\_Multiobjective\_Genetic\_Algorithm\_to\_Improve\_the\_Rate\_of\_Penetration\_and\_Reduce\_Drill\_String\_Drag |  |
| Is the language/English quality of the article suitable for scholarly communications? | In my opinion the quality of the English language is quite adequate. |  |
| Optional/General comments |  |  |

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| **PART 2:** | | |
|  | Reviewer’s comment | Author’s comment *(if agreed with the reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** |  |  |

**Reviewer Details:**

**Vadim A. Kozhevnikov, Peter the Great St.Petersburg Polytechnic University, Russian Federation**