Web of Discoveries: Journal of Analysis and Inventions
webofjournals.com/index.php/3

SELECTING A PROCESS FOR OIL AND GAS DEVELOPMENT RESERVE DEPOSITS HYDROCARBONS

Abdirazakov Akmal Ibrahimovich
Dotsent, Karshi Engineering and Economic Institute,
Karshi City, Republic of Uzbekistan
E-mail : akmal/abdirazakov@bk.ru

Mavlanov Zafar Alanazarovich
Senior Lecturer, Karshi Engineering and Economic Institute,
Karshi City, Republic of Uzbekistan

Abstract
This article presents information on the need to introduce clarifying elements to create models of heterogeneous geological objects that have a significant impact on the parameters of cone process calculations.

Keywords: design, development, deposits, effect, hydrocarbons, hydrocarbons, model, production.

Introduction

An analysis conducted in a number of works shows that the methods currently used for calculating technological and economic indicators in the design of oil and gas field development give different results in the presence of the same initial geological and production information.

Main Part

The variety of laws proposed to describe the heterogeneity of productive formations undoubtedly reflects the complexity and spatial variability of the lithological and facies environment. Consequently, the scale effect (the relative size of the area for which the parameters are determined in a separate measurement) has a strong influence on the formation of an idea of the heterogeneity of the geological object under study. This, in turn, significantly affects the results of calculating the technological indicators of development. Thus, the following can be proposed to improve the methodology of technological calculations in the development of oil and gas fields: deterministic models, the calculations for which are technologically complex and often not provided with information, such an approach allows taking into account zonal heterogeneity, achieving a more accurate identification of the calculation model with the actual indicators of field (deposit) development and, therefore, predicting them more accurately. In addition, the differentiated distribution of hydrocarbon reserves within the field requires differentiated costs and entails different degrees of profitability of hydrocarbon production in the best and worst areas. Therefore, considering a model representing a field as a set of "standard" volumetric elements, it is possible to promptly assess the state of development of hydrocarbon reserves of the field (deposit), justify the economic feasibility of involving discovered hydrocarbon reserves in development and provide specialists in the design of the technology of development and arrangement of the field with such initial information that would allow choosing a development system that guarantees the

maximum value of the hydrocarbon extraction factor with minimum or optimal production costs . Since in the course of performing all types of work in the design system, decomposition is accompanied by subsequent integration, one of the main tasks of modeling the "design object" is to ensure combinatorial summation of the results obtained for the "elementary" design objects. In other words, the system must ensure calculations for a certain part and summation of parts for each type of model.

This method (combinatorial and adaptive model) allows to calculate technical and economic indicators of development of deposits (pools) taking into account the different timing of the introduction of "standard" elements into development and to determine with a high degree of accuracy the moment of "switching off" wells from development according to a given limit of water cut of the product.

Conclusion

Hydrodynamic calculations for typical elements can be carried out using any formalized hydrodynamic model, in particular, using the models described in the works. The development process model allows:

1. Increase the reliability of forecasting technological development indicators by:
differentiated analysis of the development of certain zones of a deposit (object);
effective solution to the problem of adaptation of mathematical models of the filtration process
2. Solve multivariant problems on optimizing the order and rate of putting a field (object) into development, differentiated optimization of the well grid density .
3. To predict the technological indicators of the development of a deposit (object) using new hydrodynamic and physicochemical methods of influencing plastic. In this case:
the geometry of filtration flows is taken into account with time-varying current lines before and after the water breakthrough into the well system, not into the gallery (for vertical wells);
calculations can be performed for any placement of production and injection wells;
the possibility of taking into account the moment of well shutdown due to water cut has been determined;
multivariate calculations on computers are accelerated, which are carried out in a multiprogram mode and are produced, if necessary, output intermediate results to a plotter, monitor or printer for decision making on carrying out additional calculation options.

References

1. Абрамович М., Стриган И. Справочник по специальным функциям. М.: Наука. 1979.
2. Алиев З.С., Шеремет В.В. Определение производительности горизонтальных скважин, вскрывших газовые и газонефтяные пласты. М.: Недра, 1995.- 144 с.
3. Бабалян Г.А. и др. Вопросы механизма нефтеотдачи. Баку: Азнефтеиздат, 1956.
4. Мавланов, З. А., Абдиразаков, А. И., & Машарипов, А. Н. (2023). Современные принципы проектирования разработки нефтяных, газовых и газоконденсатных месторождений. *Экономика и социум*, (12 (115)-1), 1206-1209.
5. Азизова, Д. Г., Орипова, Л. Н., & Абдиразаков, А. И. (2024). Анализ показателей воздействия остаточной воды при добыче нефти из обводненных пластов. *Экономика и социум*, (3-1 (118)), 526-531.