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### Some questions in the of environmental risks in the subsoil

This article discusses possible solutions to the problem of environmental risks in the subsoil. Since harm to human health and the environment as a result of subsurface undeniable, there are many problems for their study.

**Key words:** ecology, environmental risks, the subsoil, the subsoil.

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#### Жер қойнауы саласындағы экологиялық тетіктердің кейбір сұрақтары

Бұл мақалада жер қойнауының экологиялық тетіктер мәселелерінің шешу жолдары қарастырған. Жер қойнауының пайдалану кезіндегі адам денсаулығына және қоршаған ортаға алып келетін зияны сөзсіз болғандықтан, осы салада шешілмеген қарастыратын мәселелер көп.

**Түйін сөздер:** экология, экологиялық тетіктер, жер қойнауы, жер қойнауын пайдалануы.

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#### Некоторые вопросы экологических рисков в области недропользования

В данной статье рассматриваются возможные пути решения проблемы экологических рисков в области недропользования. Так как причинение вреда здоровью человека и окружающей среде в результате недропользования неоспоримо, возникает много проблем для их изучения.

**Ключевые слова:** экология, экологические риски, недра, недропользование.

Today the bowels of Kazakhstan is an important component in ensuring the economic and social stability, but analysis of the current state of existing environmental risks in the subsoil suggests that increased human impact on mineral resources poses a real threat to the ecological well-off countries. Sustainable use and conservation of mineral resources should be a priority not only the state, but all of the Kazakhstan society. The probability of harm to human health and the surrounding environment as a result of activity of the subsoil in the area is quite large, which determines the environmental risks in this area. According to the Environmental Code of the Republic of Kazakhstan, the environmental risk is the possibility of adverse changes in the environment and (or) natural objects due to the influence of certain factors. [1]. Environmental risk is closely related to the production and geological risks, the basic assumptions of environmental risk can not only be

harmful anthropogenic impacts on the environment, but also the consequences of accidents due to obsolescence of equipment, or the instability of the technologies as well as non-rational development of mineral resources and the lack of geological knowledge of mineral resources [2].

A set of rules governing the organizational, environmental measures to stabilize the environmental state in the development of mineral resources are presented in a number of regulations. Basically, they are designed to minimize changes in the general condition of the subsoil, to maintain the quality of mineral resources in the economic activity of mineral resources. However, the urgency of the problem of minimizing environmental risk is increasing in all areas of subsoil use, and requires careful consideration of the existing solutions and the following environmental factors. For example in production and utilization of coal [3]:

- Violation of the integrity of the Earth's crust
- Wastewater
- Methane and other toxic and greenhouse gas emissions.

With the development of oil and gas fields there is a danger:

- Contamination of water and land resources
- Air pollution
- The negative impact on flora and fauna
- Violation of the integrity of natural resources.

In our country detected more than 200 hydrocarbon fields, and ranks 12th in the world in proven reserves of oil and gas condensate. [4] This means the problem of environmental risk as is relevant in any way for Kazakhstan. Currently, most developed fields in West Kazakhstan. The largest deposits are: Zhetybai, Karazhanbas, Tengiz, Karachaganak, Zhanazhol Kenbai, Kalamkas, Kumkol Uzen. The volume of recoverable reserves: oil – 1.5 billion tons, gas condensate – more than 600 million tons requires special attention of course shelf of the Caspian Sea, where the field, Kashagan, and Aktokty Kayran. It is possible that in the future the prospective fisheries technogenic load on the environment will only increase. By oil and gas resources of our country focused a larger volume of oil and gas compared with other littoral states, in this regard, increases the risk of dangerous environmental situation in the Caspian Sea, which requires careful consideration and amendments of existing regulations and the consistent implementation of the principles of environmental integrity and environmental safety. Also of particular concern are abandoned oil wells that are in the process of liquidation and are a source of contamination.

Everyone knows the emergency occurred in 2010 in the Gulf of Mexico oil spill, which led to large-scale environmental disaster in this regard should take into account all potentially dangerous results in the operations of subsoil use. Virtually all of the stages and operations of exploration and production of hydrocarbons accompanied by the release of liquid and solid waste. At very high differential pressures in the pipeline accident can be catastrophic, as happened in the Gulf of Mexico. Oil spills can cause the death of many living organisms and the destruction of the entire ecosystem.

In developing the gas fields are the most negative effects and soil, and water. The concentration of harmful substances such as benzene, naphthalene

and phenol often exceeds the norm. The toxic effects of these substances can negatively affect the plant world and grounds. To achieve their objectives for reducing emissions of pollutants into the environment a phased approach with allocation of risk level of human impact on the Earth. Select the main areas to minimize environmental risks during use: • rational and complex use of water resources pollution prevention • prevent technological processes • waste. to implement the above objectives and to minimize the environmental risks, we need to explore the world experience in the field of risk mitigation in the subsoil use, conduct a necessary amount of experimental work in attracting highly qualified specialists in this field. Modern living conditions of Kazakhstani society require innovative environmental framework in the field of subsoil use. Some experts proposed to solve the problem through payments for environmental pollution, the main functions of which are stimulating, compensation, control. We believe we need to expand the environmental focus of the industry, the problem can be solved in part through the introduction of new technologies for the minimum size of the damage caused to the natural environment as it happens in many oil-producing facilities of the Arctic Shelf. Technological modernization in the subsoil is one of the keys in solving minimization of environmental risks.

Based on international experience in environmental issues, the following conclusions:

1. Should regularly assess the impact of the activities of subsoil use facilities on the environment, to detect violations of environmental standards
2. Need to introduce new technologies to minimize the environmental risks
3. Necessary to expand the use and recycling of secondary raw materials
4. Please note especially the ecosystem in the developed region
5. Requires the development of life insurance in the mineral resources

The problem of minimizing environmental risks cannot be solved 100% unchanged the legislative framework, the license holder must legislate the obligation to reduce and eliminate environmental risks in the normal course of business. As stated in the strategic plan of the Ministry of environmental protection of the Republic of Kazakhstan for the years 2011-2015 for the system move towards sustainable low carbon future requires improving

the regulatory framework and its harmonization in accordance with the international requirements in the area of work to prevent climate change processes, timely development and implementation of adaptation measures aimed at reducing the vulnerability of natural and human systems to existing and anticipated climate change [5].

The "green economy" will also help to address the challenges posed by climate change. [5] the specific response will be investing in a low carbon, resource efficient economy, including through the mechanisms of the Kyoto Protocol. [5] the Government plans formation of a positive image of the Republic of Kazakhstan in the field of environmental protection. [5] in the context of the solution of this problem requires the creation of ecological and legal institutions to increase the effective innovation and reforms at the national level. Organizational and legal aspects of subsoil use objects must contain different approaches that ensure environmental sustainability. For example, the environmental policy of the Russian company OAO Gazprom, is focused on ecological safety in the performance of its activities and shall be guided by the norms of international and Russian environmental laws. We in Kazakhstan to develop environmental plans in enterprises is not a main priority in the implementation of these projects. Therefore, it is necessary to improve State legal mechanism

to ensure the minimization and elimination of risks in the field of subsoil use, a number of studies to identify a number of instruments on this subject. There is a need for a new standard that combines accompanied by adequate economic and environmental security. As the practice shows the introduction of economic instruments (environmental fees) was not sufficiently effective method of maintaining an environmentally friendly production cycles. A system of principles of ecological risks should be carried out in the following areas:

- A study of the grounds of environmental risks
- Comparative legal regulatory environmental risk assessment
- Determination of the effectiveness of existing and emerging methods of minimizing and eliminating environmental risks
- Develop a set of recommendations on the problem of minimizing and eliminating environmental risks.

The introduction of practical and theoretical results will effectively solve the problem of minimizing and eliminating environmental risks. The global impact of technogenic influence on the environment requires continuous learning and the development of adequate measures to reduce environmental risks to subsoil use in order to prevent large-scale emergency situations with irreparable environmental consequences.

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