IMPACT OF MINING OPERATIONS ON THE ENVIRONMENT

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Abstract. The current scale of mining production is characterized by intensive use of natural resources, increasing waste and environmental degradation. In this regard, more and more attention is being paid to the issue of economically sound and environmentally safe operation of a mining enterprise. The specific impact of a particular mining enterprise on the environment is due to the geological and geochemical features of the deposits and the technology used for its development. The article considers an example of analysis of the content of environmental protection measures and the main directions of environmental activities of a mining enterprise.

Keywords: mining production, mine, ecology.

At the present stage of development, society has come to the conclusion that civilization is threatened primarily by environmental problems. Therefore, at the state level, it is recognized that environmental security is one of the main components of national security, along with economic and political. The factors that influence this are enterprises that process various minerals ,including mining. During the enrichment of rocks and minerals, the atmosphere is also polluted during the preparatory processes – crushing of ore and subsequent screening. During ore processing, dust and emissions are formed, consisting of particles of the processed mineral and rock .Now the question Is how to reduce the environmental impact of mining? As for this, there are 2 ways of conducting mining: mine and quarry. Environmental damage is mainly caused at quarry mining and processing plants. Therefore, in order to reduce this, it is necessary to start working enterprises that use the mine method .But mining is considered dangerous for people. Its own requirements and rules must be strictly observed. In order to solve these problems, a new science of mining ecology has emerged.

The main environmental pollutants are: fuel industry, mining and processing of ferrous and non-ferrous metals. The ratio of waste in the mining industry: 80% for extraction, 15% for enrichment and 5% for metallurgical processing. Large industrial complexes and processing plants cause the following negative phenomena: various violations of the earth, pollution of the hydrosphere, air, salinization, waterlogging, destruction and suppression of vegetation. During the development of PI deposits, the environment is significantly polluted. Of every ton of mineral, only 2 % is converted into a useful product and 98% is sent to waste. According to the nature of atmospheric, lithosphere and hydrosphere pollution, the mining industry ranks 4th after the chemical, metallurgical and agricultural industries.

As a result of mining operations, there is a significant deterioration in the quality of drinking water sources. The hydrosphere is polluted by the discharge of quarry water, which contains various mechanical particles, chemical solutions and biological impurities. From the surface of waste rock dumps, oxides of various metals fall into the lithosphere, and dust is also deposited during

weathering and transportation.

The lithosphere is polluted by the placement of toxic and radioactive waste, as well as chemical solutions and microorganisms. In the future, surface water sources are polluted with various impurities. When designing quarries, underground water supply zones are disrupted. Mining operations affect the biosphere and all its spheres: hydrosphere, atmosphere, lithosphere, flora and fauna.

The influence of the mining industry is divided into direct (direct) and indirect. The scale of indirect impact can significantly exceed the impact of the initial one.

The main sources of influence on the biosphere during mining operations: waste rock dumps, quarry roads, developed space, etc.

Unorganized sources pollute land areas with emissions in the following cases:

in the quarry: drilling wells, conducting explosions, loading and unloading operations; on dumps: loading of waste rock, formation of tiers of various rocks, dusty surfaces;

The reconstruction of the quarry indirectly affects the environment.

When mining open-pit mines, the natural landscape changes, which is directly affected by mining operations.

Influence of indirect impact on the lithosphere during mining operations:

contamination of the soil and vegetation layer with various substances on the surface;

negative impact on the germination and growth of plants as well as the living conditions of animals;

various types of erosion;

violation of the underground water regime.

The negative impact on the soil and plants is mainly caused by quarries, dumps, and tailings dumps. Aspects of air pollution in open-pit mining are emissions of harmful substances from organized and unorganized sources. As a result, the biosphere is polluted during mining operations, which negatively affects the state of the soil, water sources, the atmosphere and the incidence of living organisms.

Regarding the classification of the impact of mining on the environment;

When the mining industry has a negative impact, several groups are identified:

sediment of the lithosphere due to mining operations and pumping of underground water;

negative impact on agriculture and fishing due to water pumping;

negative impact on agriculture and forestry due to emissions of sulfur oxides;

negative impact on living conditions. A large area is occupied by waste collection, construction of settling tanks.

As mentioned above, the career approach is extremely harmful to the environment.This analysis is one way of quarrying-open pit mining that leads to the spread of many gases and smoke into the air.And if the mining method is used, then undoubtedly, damage to the environment is reduced.But the mining method is considered extremely dangerous for people.To reduce its damage, it is necessary to strictly observe the rules of mine deposits and provide only special qualified specialists in this direction.Currently, there are incentives for mining professionals in the country.If the work of qualified specialists is carried out in the fields opened by the mine method,then the

danger to humans is reduced.The most important thing is safety.

The purpose of mine exploration is to minimize damage to the environment.The country is rich in minerals.Therefore, for the correct and harmless use of the wealth of our country, it is necessary to use effective methods of its exploration.For this purpose, the company should open many educational institutions in our country that train specialists to work in mines.Safety during underground exploration, people do not harm themselves or the environment.This is only in the hands of professional specialists, those with special education.The main final goal of the article is to develop effective methods for reducing environmental damage during geological exploration in mining.

In conclusion, open processing and processing of minerals negatively affect the environment. All elements of an ecosystem are contaminated: soil cover hydrofera and atmosphere.The prevention of this is to develop a mining method.This problem will be widely considered in the future.the environment itself is in the hands of man.Its main task is to keep it clean and harmless. Therefore, it is obvious that in the future there will be a shortage of specialists in this field.If the harm to the environment is reduced, then the environmental danger that threatens people and the entire world will also decrease.

Environmental security focuses the international community on the need to recognize the objective reality: the nature of the planet is not only the physical environment in which humanity develops, not only a source of resources for obtaining material and spiritual values, but primarily the basis for the existence of life.

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