Czech
Journal of Multidisciplinary Innovations
Volume 30, June 2024.
ISSN (E): 2788-0389
Website: www.peerianjournal.com
Email: editor@peerianjournal.com

Hardness and mineralogical composition of rocks in open pit mining

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Abstract: In mining enterprises, it is necessary to pay attention to the physico-mechanical and chemical composition of rocks during the open mining of minerals. For this, it is appropriate to study the hardness coefficient of rocks. In open pit mining, we can see the properties of rocks such as hardness, brittleness, scratchability. When mining rocks, we need to determine the mechanical impact of mining vehicles on the excavated part of the ore body. In most mines, the coefficient of strength of rocks is determined depending on the location coordinates of the mineral. In order to completely separate the ore body from the layer, it is necessary to separate the ore from the layer without damaging it. This prevents loss of ore and deterioration of ore in the mining enterprise.

Keywords: Ore body, rock composition, rock properties, mine mining system, coefficient of strength, mineralogical analysis, open pit mining, ore degradation, ore loss process.

Introduction

The properties of rocks in the extraction of ore bodies in mining enterprises are characterized by indicators of mineralogical, chemical and mineralogical composition and strength coefficient. It is a useful component in the composition of mineral varieties. Sometimes harmful components are also determined by the composition of the mining scheme. Each mineral has its own type and grade, there are industrial requirements. The basis of these requirements are the conditions of their use and processing. The fulfillment of these requirements is guaranteed during technical and economic processing of product quality. Extraction from a given mineral will increase the cost of processing it. This, in turn, leads to a decrease in efficiency. The final efficiency of the mining industry is achieved during the processing of minerals in the beneficiation plants. That is why the quality of the mineral delivered to the consumer during the production of mining works in the quarry is of great importance. Covering the 4th stone with technological features characterized not only by quality indicators. These quality indicators have a special place in the use of raw materials from building materials or covered rocks in enterprises. In addition, some rocks are considered as promising minerals. They should be placed in special containers, taking into account their separate extraction and future use. This mineral is found in a variety of natural conditions where it is mined in an open pit manner. Mining technology and mechanization and general technical and economic selection indicators are influenced by the location conditions of the mine. This Despite our different circumstances, we are all the same are divided into the following types according to their distinguishing features The process of preparing rocks for mining – mining in order to ensure its effectiveness. the natural state of the "mountain" rock includes a change-oriented process. Hard rock in the preparatory stage for quarrying the rock is fragmented by blasting and is of moderate hardness and rocks are broken down by mechanical means. From mechanical crushing to blast crushing more profitable than high productivity. Cost It is small and has high operational security. Mechanical grinding apply to 1 rock with strength factor f=8 possible. The strength coefficient of the explosive softening method is higher than f=8 applied to rock in open pit mining Blasting is a widely used method for preparing rocks for mining used. Use explosives on the rock mass. There are 5 different

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views: Hash method of camera charges (trenches in mountainous conditions used in mass explosions to create);
- the method of applying boiler fees (on high and steep stairs used to increase charge mass);
- well charging method;
- spur charging method (mainly. by digging building materials used more in getting);
- mass charging method (secondary grinding and auxiliary used in works).

From excavation to drilling and exploration in the next three stages of mining and exploitation. Some basic operations are carried out independently and the product is mined taken and transported. As described in mining these steps are mine activity unit of the extractive industry - is called. If they extract a mineral, it will have a direct effect if it does, we call it a manufacturing operation; Assistant operations support the core business of mining. but. as a rule, this is worker or operation safety is the "direct" part necessary for its effectiveness does not count. Our interest is mining and exploitation focused on the operations used to implement Direct mining and transportation of rocks Loading or unloading the tool itself is the worker of the machine moving the stone from one place to another with the help of organ and Dumping is called excavation-loading. To mechanize this process. its uses are diverse universal and career tools are used. Excavators are widely used in quarrying and loading. Excavator work is the main technological process of quarrying. Scrapers and bulldozers are used in some quarries. Digging – loading works are carried out using one vehicle. Mine mass is transported using quarry transport. Career The task of transport is to load the mineral from the warehouse to bunkers or concentrators. covering the mountain and it consists of transporting rocks up to the hills. Different types of quarries for transporting ore mass in quarries transports are used. Main vehicles: The distance of railway transport is 14 km and more. Yearly and in quarries with cargo turnover of 25 million tons and more widely used. The carrying capacity of railway transport is 100- Dumpers with 180 t wagons are used. And as a locomotive. electric trains and locomotives are used. The maximum slope of the road 60% The turning radius is 180-200 m. Car transportation distance is 4-5 km and annual the size of the load cycle is not very large. that is, it was 15-20 million tons widely used in careers. Motor transport iron has many advantages over automobile transport: maneuverability volume. The magnitude of the slope, i.e. 150%, and the turning radius smallness The speed of car transport on the streets is 10 km per hour. based on) 18-25 km/s in oxen. Conveyor transport (belt conveyor) crushed in the quarry for transportation of mining mass (fragment size up to 400 mm). by hand. Labor productivity in the quarry is from 300 to 1000 mVs. Belt conveyors are used. Sometimes conveyors reaches 12000 m3/s. Conveyor belt width - from 900 up to 2000 mm. movement speed - from 2 m sec to 5 m / sec enough The use of conveyors ensures continuity of transport. Forming outgrowths from covered ridges. Open-pit mining of mineral deposits is known. Necessity of excavation and transportation of cover rocks related to Portable paving stones are specially designed for this purpose placed in the prepared areas. Formed as a result of emplacement of cover rocks called a pile flip. Rocks in the production process. Placement in mining open pits formation. It is located in a previously excavated quarry if the internal is overturned. is called external overturning from the quarry boundary. In the mining of various rocks and various minerals, is made in the ground for the purpose of digging a hole. The sum of the works is called open-cast mining. On a large scale open pit mining is an integral part of mineral extraction in touch. Mining of underground mineral resources all works and processes related to obtaining. open pit mining facilities. It is useful in underground mines mineral

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resources using specially equipped underground facilities is mined. Mining operations in open pit mining divided into two parts:
- open works (excavation, transportation and placement of covering rocks). works):
- mining works (excavation, transportation of useful minerals. pick-up or drop-off operations). Excavation covers mineral deposits consists of removal. This process is to reach the mineral must provide and create conditions for its safe extraction. As a result of opening and digging, a quarry is formed. Quarry - open mining of mineral deposits mining enterprise. For production purposes and purposes a separate mine that combines opener and preparatory solders preparatory work is carried out (main trench and semi-trench. Mowing trench and half-cut trench and other seams). Preparation for mining. The purpose of doing things is that these excavations and transportation to the mine front paves the way to ensure its arrival.
It also includes open pit mining:
- preparation of the mine and its separate sections (mainly preparation of the upper part);
- strength of the massif of mined rocks taking into account mine protection and structures works (maintenance of water balance. self-excavation of rocks prevention of burning and deformation of the surface restoration work, etc.). The term "technology" is usually a type of technique methods of organizing production work. Tools is a set of knowledge about Given the power of technical means. Main are mined by methods based on the laws of knowledge and organized on the basis of mechanized reception. each other extraction of deposits to the sum of mining processes related to technology - is called.
There are two open pit mining technologies aspect includes:
- technology of production processes (mine. Transport and taking over their families);
- open pit mining technology (mining solder complex
As mine construction by quarry environment and time and development). Production technology - includes the following takes: principles of basic production processes. Tools mechanization complexes and organizational schemes; mountain preparation of rocks for mining. excavation and loading operations. Transport confiscation and release of the mass of mines. Open pit mining technology Career indicators, mine. Methods of welding. Mining development at Carver scheme mining methods and mining systems. Product quality management methods and tools mine planning and looks at the principles of organization. The indicated works should be carried out in the same order. Mining the necessary time that can provide technical conditions between jobs opening and mine front, tools and equipment production and safety works in full exploitation of the mine It is necessary to organize the correct distribution. At the edge of the career It is an open-pit mine that is organized and sequenced on its site It is called mining system. For long-term use of mining materials (trench and underground welds), for the transportation of cover rocks. mineral resources delivery to reception points located in the upper part of the em; materials and equipment from the surface to the working horizon and providing transportation for people, ie from the top of the outlet to the working place of the quarry and warehouse open pit mining debited to the arrival of transport. Mining machine mechanisms with high power and productivity and use of equipment. mining in open pit production. Mining open pits (wide areas, long steps, etc.) are large should be in dimensions. Excavator used in quarry loading rocks with a yield of up to 10 million tons per year to achieve provision and development of highly qualified personnel it is necessary to clearly organize the release. For open mining of mineral deposits mineral deposits are not much deeper than the

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earth's surface. It is not false or the economic efficiency of the mine to the underground method. It is used if it is larger than open pit mining the following conditions are taken into account when leaving. they are production safety is achieved through: surface and underground water removal. protection from snow, sliding and ensure the slope of the steps that can fall and reinforcement. and several other activities. In quarries The increase in dust and gas in the atmosphere is often considered a drill when digging wells. mine mass using excavators when loaded multiple times. when there is a fire in places (coal in mining). When working with diesel vans, the carrier is loaded when cars are moving regularly and other defects occurs due to In such cases, ventilation of workplaces. measures must be taken to prevent dust and fire. Voluntary determination of the procedure for the development of open-pit mining works not allowed.

Conclusion

Another step in the discussion of the coefficient of strength of rocks in mines is the career field - its probable depth, bottom and surface dimensions, the slope angle of the board, as well as the mass of the mine and the total amount of mineral stock solutions (preliminary). Also mineral consumers. placement of wings, possible locations of tail guards and their approximate dimensions are shown. It allows you to specify the places where the loads in the quarry can be directed and moved. Discussions are based on the possible size of the quarry area, the location of its surface in relation to the terrain, as well as the approximate contours of future enterprise mine networks. Only after that, taking into account the necessary capacity of the quarry, they begin to solve problems in accordance with the procedure of the state plan for the development of mining works in the quarry area. Various bearing patterns in flat surface conditions with guides. The direction of mining operations is described. In the mining industry, the solutions needed to open up the mining industry in the coming periods and to accelerate the introduction of comprehensive mechanization of mining operations and use the reduction of capital costs, which is a development that ensures a high level of profitability with a minimum volume of mining and construction. taking into account the system. they start working near the surface of the mineral deposit.

References

1. Джаксымуратов, К. М., et al. "ИСПОЛЬЗОВАНИЕ ПРЕСНЫХ ПОДЗЕМНЫХ ВОД МЕСТОРОЖДЕНИЯ КЕГЕЙЛИ." Экономика и социум 12-1 (91) (2021): 975-980.
2. Jumabayeva, G., B. Allanazarov, and A. Joldasbayeva. "STAGES OF OPEN PIT MINING. MINING METHODS AND THEIR PROCESSES." Science and innovation 2.A1 (2023): 236-240.
3. Allanazarov, Bayrambay. "GEODETIC DIMENSIONING STUDIES AND POINT-DIMENSION LOCATION COORDINATE SCHEME CREATION PROCESSES." Евразийский журнал академических исследований 3.4 Part 2 (2023): 21-25.
4. Yeshmuratova, A., et al. "MINE BLASTING PROCESSES OPTIMIZATION STAGES OF DIGITAL TECHNOLOGY OF DETONATORS." Scienceweb academic papers collection.–2023 (2023).
5. Yeshmuratova, A., and N. Amanbaev. "Ensuring Computer Data and Management System Security." International Bulletin of Applied Science and Technology 3.4 (2023): 282-287.
6. Yeshmuratova, Amangul. "TECHNOLOGICAL METHODS OF ENSURING INFORMATION SECURITY IN TECHNICAL SYSTEMS." Евразийский журнал академических исследований 3.4 (2023): 188-192.

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7. Ермекбаев, Умиджон, et al. "НАБЛЮДЕНИЕ ЗА ДЕФОРМАЦИЯМИ БОРТОВ, ОТКОСОВ УСТУПОВ И ОТВАЛОВ НА КАРЬЕРАХ И РАЗРАБОТКЕ МЕРОПРИЯТИЙ ПО ОБЕСПЕЧЕНИЮ ИХ УСТОЙЧИВОСТИ: https://doi. org/10.5281/zenodo. 11222640." International scientific and practical conference. Vol. 1. No. 2. 2024.
8. Суйунов, Аброр Салохиддинович, and Учкунжон Мардонович Мирзаев. "ОСОБЕННОСТИ ВЛИЯНИЕ НА ОКРУЖАЮЩУЮ СРЕДУ ОТКРЫТЫХ ГОРНЫХ РАБОТ FEATURES ENVIRONMENTAL IMPACT OF OPEN-PIT MINING." Scientific Impulse 1.8 (2023): 9-12.
9. Karamatdin, Djaksymuratov, and Dzhumanazarova AltynguKurbaniyazova Baxitgul. "Changes in the regime and use of fresh groundwater in the Southern Aral Sea region." Solid State Technology 63.6 (2020): 15884-15887.
10. Джуманазарова, Алтынгуль Тенгеловна, Шаригуль Балтамуратовна Толепова, and Рано Максетовна Жуматова. "ПРОБЛЕМЫ КАЧЕСТВА ОРОСИТЕЛЬНЫХ ВОД." Science and innovation 1.D3 (2022): 263-267.
11. Джуманазарова, А. Т., А. С. Генжемуратов, and Данияр Калбаевич Жумамуратов. "Изменение режима и использование пресных подземных вод Южного Приаралья." СЕЛЕКЦИЯ, СЕМЕНОВОДСТВО, ТЕХНОЛОГИЯ ВОЗДЕЛЫВАНИЯ И ПЕРЕРАБОТКА СЕЛЬСКОХОЗЯЙСТВЕННЫХ КУЛЬТУР (2021): 249-253.
12. Джуманазарова, Алтынгуль, Абдикадир Генжемуратов, and Рано Жуматова. "Засоление почв в низовьях Амударьи-основная проблема орошаемого земледелия." Евразийский журнал академических исследований 3.6 Part 3 (2023): 163-168.
13. Matjanov, Aman. "SCIENTIFIC RESEARCH OF THE LIFESTYLE OF THE PEOPLE EVACUATED IN KARAKALPAKSTAN." Modern Science and Research 2.10 (2023): 771-775.
14. Aman, Matjanov. "Traditional Transport among the Peoples of the Aral Region (1800-1873)." Res Militaris 13.1 (2023): 2985-2988.
15. Матжанов, Аман Жарылкапович. "Транспортные проблемы Каракалпакстана в 1920-1930 годы." Бюллетень науки и практики 7.6 (2021): 509-517.
16. Норматова, Муборак Жабборовна, and Самандар Шодмонович Абруйев. "КАРЬЕРЛАРДА ОММАВИЙ ПОРТЛАТИШЛАРДА ЧАНГ-ГАЗ ҲОСИЛ БЎЛИШИНИ КАМАЙТИРИШ." Innovative Development in Educational Activities 2.8 (2023): 425-428.
17. Заиров, Ш. Ш., М. Ж. Норматова, and Ш. З. Худойназаров. "ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ ПЫЛЕПОДАВЛЕНИЯ ПРИ МАССОВЫХ ВЗРЫВАХ НА КАРЬЕРАХ." Экономика и социум 3-1 (82) (2021): 556-559.
18. Заиров, Шерзод Шарипович, Муборак Жабборовна Норматова, and Сарвинос Ботир Қизи Пардаева. "КАРЬЕРЛАРДА ЯЛПИ ПОРТЛАТИШ ИШЛАРИНИ ОЛИБ БОРИШДА АТРОФ МУҲИТГА НЕГАТИВ ТАЪСИРИНИ КАМАЙТИРИШ." Academic research in educational sciences 2.3 (2021): 305-311.
19. Заиров, Шерзод Шарипович, et al. "Разработка способов управления пылегазовым режимом при взрывании высоких уступов в глубоких карьерах." Известия высших учебных заведений. Горный журнал 4 (2020): 113-121.
20. ЗАИРОВ, ШШ, МЖ НОРМАТОВА, and МХ РАВШАНОВА. "Определение оптимальных параметров подпорной стенки при массовых взрывах на карьерах." Ãîðíûé æóðíàë (2017): 102872.