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2/36 урок 18

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группа 3-ТАКХС-21

Тема: Coal Mining.

Task 1. Read and translate the text in the written form.

THE COAL MINING LIFE CYCLE

**1. Exploration**

Coal exploration includes gathering data, which allows for decisions to be made on the desirability of further exploration, the technical feasibility of mining, and economic feasibility – including the size of the mine and the quality of the coal.

Geologic mapping, aerial photography and photogrammetry are all used in exploration. Drilling is the most reliable and cost-effective method of gathering information about a coal deposit and the mining conditions. It provides physical samples of the coal and overlying strata for chemical and physical analysis. Geophysical exploration measures the seismic, electric, magnetic, radiometric and gravitational properties of materials in order to detect the structural features that define the coal deposits.

**2. Mine development**

Coal can be extracted from the earth either by surface mining or underground mining. In open-pit coal mining, a pit is dug in an area and this pit becomes the open-pit mine, sometimes called a quarry. Open-pit mines can expand to huge dimensions, until the coal deposit has been mined or the cost of transporting becomes too great.

In underground coal mining, access to the coal seam is gained by suitable openings from the surface, and a network of roadways driven in the seam then makes possible the installation of facilities for human and material transport, ventilation, water handling and drainage, and power.

**3. Haulage**

Coal haulage, the transport of mined coal from working faces to the surface, is a major factor in underground-mine efficiency. It can be considered in three stages: face haulage, which transfers the coal from working faces; intermediate haulage, which transfers the coal onto the main haulage; and the main haulage system, which removes the coal from the mine. Various methods of haulage are used in different situations and stages and may include electric-powered, rubber-tyred vehicles; chain haulage; armoured face conveyors, mine cars driven by electric- or diesel-powered locomotives.

Workers and materials may be carried to and from the working face by scoops, battery- or diesel-powered trucks, tractors, buses or light duty vehicles.

**4. Coal preparation**

The coal that comes directly from a mine has impurities in it. Buyers may demand certain specifications depending on the intended use of the coal: utility combustion, carbonisation, liquefaction, or gasification.

A coal preparation or beneficiation plant is a facility that washes coal of impurities such as ash, soil and rock, crushes it into graded and sized chunks (sorting), stockpiles grades, and prepares and loads it for transport to market.

The more of this waste that can be removed from coal, the lower its total ash content, the greater its market value (because its heating value has increased) and the lower its transportation costs.

**5. Transporting**

Once coal has been prepared, higher grades are delivered to export markets while the lower-grade product is purchased by Eskom and burned in specially-designed power station boiler hearths.

Richards Bay Coal Terminal (RBCT) serves as the primary export port for South African coal, and is one of the world’s leading coal export terminals. South Africa’s national utility, Transnet, provides the railway services linking the coal mines to the port, and the shipping coordination of more than 900 ships per annum.

Opened in 1976 with an original capacity of 12 million tonnes per annum, RBCT has grown into an advanced 24-hour operation with a design capacity of 91 million tonnes per annum.

Positioned at one of the world’s deep sea ports, RBCT is able to handle large ships and subsequent large volumes. It has gained a reputation for operating efficiently and reliably. The 276 hectare site currently boasts a quay 2.22 kilometres long with six berths and four ship loaders, with stockyard capacity of 8.2 million tonnes.

Task 2. Rewrite the new words in the copy-book, learn the words. Записать новые слова в тетрадь:

feasibility- *осуществляемость*

geologic mapping- *геологическое картрирование*

quarry- *карьер*

open-pit mine- *открытые шахты*

coal haulage- *перевозка угля*

armoured face conveyor- *бронированный забойный конвейер*

utility combustion- *полезное сжигание*

beneficiation plant- *обогатительная фабрика*

subsequent large volumes- *последующие большие объемы*

four ship loaders- *четыре судопогрузчика*

Task 3. Отправить задание на электронную почту. Иметь задание в наличии в рабочей тетради.

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E-mail: grossbach@mail.ru отправлять задание!

P.S. если вы забыли, как читается слово, используйте Google-переводчик в своем мобильном, он проговаривает нужное слово.