

Unlike military explosives, which are mainly based on pure compounds, commercial mining explosives consist of oxidants, sensitizers and inert components, which is why they have a heterogeneous structure. If they do not contain any components that are classified as pure explosives, then they belong to the means of demolition. Due to their low sensitivity to initiation, demolition devices are extremely safe for transport, storage and handling, as a result of which they are not subject to strict regulations that apply to real explosives. This greatly simplifies, and thus makes their production and application cheaper. Modern commercial explosives have much greater stability and resistance to moisture than traditional ones, and they are also adapted for mechanized direct filling of wells (pumping). Rio Tinto will use two-component emulsion explosives in the exploitation of jadarite ore and drilling of underground tunnels in Serbia. Emulsion explosives consist of ammonium nitrate and some organic fuel. They are water resistant and do not release a large amount of toxic products during detonation. The detonation speed of these explosives ranges from 4800 to 5000 m / s, which depends on the composition, density and diameter of the charge. They are suitable for underground and aboveground mining, quarries or open pits.

Artificially induced explosions in mines and quarries are characterized by a series of side effects that are manifested in the process itself, or in their reflection on the environment of destruction and the environment. The accompanying, in practice, side effects of explosions are manifested above the middle of the immediate destruction, namely: dust-gas clouds with possible poisonous gases, air shock waves, scattering of fragments from the mined rock and seismic vibrations. In the dust-gas clouds during the exploitation of jadarite ore, there will be a poisonous, gaseous compound, hydrogen sulfide, which smells unpleasantly of rotten eggs; arsenic, which will pollute water and soil. In addition to arsenic and hydrogen sulfide, nickel, cadmium, boron, and all carcinogenic elements can be found in these dust clouds.

During the operation of the mine, PM 10 and PM 2.5 particles will be formed in the air, but also smaller, of the order of nanometers, which will contain the listed metals and which, when inhaled, contribute to the development of various lung diseases, as well as cancer.

The seismic effects of explosions during mass blasting occur as reactions of the soil to the mechanical action of the released energy of explosive charges initiated in it. They are manifested by vibrations that are defined by speed, intensity and duration. The intensity of seismic vibrations is characterized by the speed of oscillation of rock fragments.

Seismic vibrations of the ground, which can cause damage to objects in the range of stronger earthquake intensity, are part of the excess energy of explosives that is not used in the process of destruction. The negative effects of blasting, along with the vibration of the ground at the locations of buildings damaged by seismic explosions, often serve as evidence

in litigation between companies that carry out blasting and the owners of these facilities. Mining companies in most countries are required to follow strict environmental and rehabilitation standards in order to minimize environmental impact and avoid impact on human health. These norms and regulations require joint steps of environmental impact assessment, development of environmental management plans, mine closure planning (which must be done before the start of mining operations), and environmental monitoring during operation and after closure.

All competence in the field of mining is on the republic authorities, while the local communities on whose territory the mines are located have almost no authority. Funds from fees for the use of mineral raw materials belong to the national budget, from where a smaller percentage is transferred to local budgets.

This means that the interest of local communities is endangered at the expense of the arrival of large companies, whose only interest is making a profit, and they come to countries with lower environmental standards or where there is no strict control over the application of world standards and green mining principles. Their story about applying the principles of green mining, cooperating and helping the local community, is just a screen in front of the media and state bodies to cover up non-compliance with the law and their own company standards.

To see what the use of commercial explosives for digging ore passages for the jadarite mine will look like, you should visit the city of Bor, where the Chinese are intensively using explosives to open a copper and gold mine in Cukaru Peki. According to the testimony of the locals, these works are accompanied by daily explosions, even at night. This damages residential buildings, creates long cracks in the walls, as wide as 10 centimeters, dries wells, pollutes the environment, damages agricultural land, illegal logging, which shows that the company is far from committing to the principles of green mining, which are loud they speak. At the same time, previously established contacts with the local population were cut off. Households suffer significant economic damage, are left without water in wells, their ownership of agricultural land, forests, facilities is endangered, and due to polluted air and rivers, they cannot engage in traditional economic activities. Due to the large dust, which is caused by explosions, they cannot grow ordinary agricultural crops, nor can they engage in vegetables, from which they lived.

The same, and maybe worse, awaits the inhabitants of Radjevina. The Rio Tinto mine and ore processing will be located in the most fertile land of Radjevina. Raspberries, various fruits are grown there, beehives are nurtured, healthy milk and various cheeses are produced. Not a single piece of land is uncultivated! The mine will occupy clean and healthy

## The impact of the use of explosives in Rio Tint 's exploitation of jadarite ore in Serbia

land of 1234.66 hectares, and the direct impact of the mine will be felt around 2023 hectares. Rio Tinto intends to open the largest lithium mine in Europe, and thus pollute, not only the fertile Radjevina, but also areas outside the mine area, which will have consequences throughout Western Serbia, and beyond, across the border area. Mine or health is an issue for the entire government of Serbia, and especially for the Ministry of Environment and the Ministry of Health.

Source: koreni.rs