PRELIMINARY ASSESSMENT OF THE CONTENT OF VALUABLE COMPONENTS IN COAL MINE WASTE DUMPS

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Purpose. Study of the mineralogical and chemical composition of waste rocks from the Western Donbass coal mines dumps to establish the presence of valuable components and their subsequent industrial development. The present work is a continuation of work [1-3]. This work expands the knowledge about the availability of valuable components in waste dumps for industrial development of their resources in the future [4-12].

Methodology. Samples of rocks were taken from a dump of one of the mines in Western Donbass, crushed to a size of -5.0 mm and examined by microscopic and X-ray spectral analysis to determine the mineral and chemical composition.

Findings. The presence of value metals Al, Fe, Ti, Sc, Ge, Ga in empty rocks, which may be subject to industrial development, has been established. It is determined that argillites and siltstones are predominant in the mixture of waste rocks – 70-80%, sandstone 10-20, coal 5-10%. The peculiarities of the content of valuable components in the different fractions of waste rocks have been studied. The main directions of use of waste dumps – extraction of valuable components and as a source of valuable raw materials for the construction industry are covered. Emphasis is placed on technological, economic and social aspects of the feasibility of industrial development of waste dumps, as well as the main reasons that currently complicate this process.

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Key words: waste dump, coal, rare earth metals, methods of substance analysis.

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