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**THE MODEL OF MINERAL EXTRACTION
BY THE UNDERGROUND LEACHING METHOD
WITH TAKING INTO ACCOUNT NON-HOMOGENEITY
OF INITIAL MINERAL DISTRIBUTION**

The underground leaching method or method of In-Situ Leaching (ISL) is used at the low concentrated mineral deposits exploitation. The underground leaching method is distinguished by high ecological safety and profitability in comparison with the traditional method of production.

In-situ leaching is a method for development of ore deposits without lifting the ore to the surface by selective transfer of ions of natural uranium into productive solution in subsurface. This method is performed by drilling of wells through mineral ore bodies, supply of solution into mineral ore bodies, lifting of mineral containing solutions to the surface and extraction of mineral in sorption ion-exchanging units, addition of acid into mother solutions and injection into subsurface.

Thus, the method of in-situ leaching, without exaggeration, is the most economical and ecologically safe method of production compared with all other known methods.

The problems dealing with the increasing of mineral's excavation rate and the optimal wells locations arise at minerals extraction by ULM. The mineral's excavation rate depends on the types of wells location, the distribution of minerals in layer, the structure of layers and deposit's exploitation conditions. In this work the influence of wells location on mineral's extraction rate is investigated.

The study of liquid filtration in layer and dissolution of salt are based on the Darcy's law and one-step chemistry model of dissolution. In addition, the leaching processes in the layer (porous media) is simulated using conservation equations of mass and species.

The computer models of mineral extraction by the method of of In-Situ Leaching with taking into account of layer's anisotropy and non-homogeneity initial mineral distribution are elaborated in given work.

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REFERENCES

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