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Numerical Study of Usage Efficiency of Multistage Filters on Mineral Leaching Process MEDET INKARBEKOV, ALIBEK KULJABEKOV, KARLYGASH ALIBAYEVA, AIDARKHAN KALTAYEV, Al-Farabi Kazakh National University — The numerical study of the usage efficiency of the multistage filters setting technology is carried out on the basis of mathematical simulation. And its application on in-situ mineral leaching process is considered. So long as mineral bearing sandstone in deposit mostly is separated by interbedded layers of sands and clays, it's expedient to use multistage filters setting technology at the mineral extraction. A comparison of the extraction degree at single and multistage filters is implemented. The results of calculations show that the distribution of flow (inflow) on well height is not uniform. In the calculations the well accepted as high-permeability channel, depending on the construction of the filter. Obtained results for a multistage filters setting qualitatively conform to the experimental findings. Wellbore is considered as a surface with a constant reduced pressure in the bottom-hole formation zone. But such assumption does not show a qualitative picture of the fluid flow in the bottomhole zone [Brovin K.G., Grabovnikov V.A., 1997]. To construct an accurate mathematical model it's necessary to use Navier-Stokes equation for the interior of a vertical wellbore, and the filtration law for modeling the filtration in the reservoir. Strictly speaking, it would have had to sew two laws on the contact surface of a rock and filter. Such review requires enormous computing, as far as computational grid must be sufficiently thick to cover the interior of the wellbore.

Medet Inkarbekov
Al-Farabi Kazakh National University

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