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COST OF URANIUM COMPLEXES OBTAINING BY SUPERCRITICAL CARBON DIOXIDE

A review of the uranium content in ores from different deposits of the world and contains the estimated cost of its production in Ukraine is presented. The quantitative characteristics of the uranium content in the tailings materials of the former uranium-processing plant - Production Association Pridneprovskiy Chemical Plant (PA "PCP") Dneprodzerzhinsk (since 2016 Kamensk city) is discussed. The method of supercritical fluid extraction of carbon dioxide (SFE-CO₂) complexes of uranium-containing compounds for the extraction of uranium from tailings is proposed to use. The list of materials and reagents for SFE - CO₂ from complexes of uranium-containing compounds is defined. The describing of procedures and their sequence for the sample preparation are done. The calculation of the cost of uranium extraction by SFE-CO₂ from tailings PCP Dneprodzerzhinsk is presented. It is found that the production cost of uranium complexes may amount of 344.32 UAH/kg (13,77 USD/kg) to 457.08 UAH/kg (18,28 USD/kg) (at the rate of the NBU as of 28.01.2016 25,0054 UAH/USD).

Keywords: uranium resources uranium-containing compound; uranium extraction, production cost, a method for supercritical fluid extraction.