

## **Estimation of the Radioactive Elements in Raw Materials Utilized in the Ceramic Industry, Anbar, Western Iraq**

In the present study, The High-Purity Germanium system was utilized to Radionuclide concentrations of 10 specimens of raw materials utilized in the ceramic manufacture from the ceramic plant in Anbar, western Iraq. The concentrations ranged between 5.035-31.410, 11.330-33.870, 85.380-272.320 Bq/kg of  $^{238}\text{U}$ ,  $^{232}\text{Th}$  and  $^{40}\text{K}$ , respectively, with an aggregate rate of  $23.523\pm 4.121$ ,  $23.616\pm 5.308$ ,  $176.084\pm 58.848$  Bq/kg, respectively. The radiological aspects were discussed by computing the gamma radiance parameters. Consequently, the qualitative activity level and gamma radiance parameters are less than the authorized Global Rate's worth of US Environmental Protection Agency (standards). The prospective source of  $^{238}\text{U}$ ,  $^{232}\text{Th}$ , and  $^{40}\text{K}$  in raw material specimens has contained specimens a small number of radioactive minerals like monazite, chromite, zircon, tourmaline, titanite, and apatite, there are no appreciable radiation hazard indices to personnel's in the raw material department of the study region. The research recommends proposing new Iraqi standards that specify the permissible percentages of qualitative activity concentration also gamma radiance parameters to preserve the environment and human