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Environmental Radioactivity Monitoring and Radiological Impact Assessment of Agbara Industrial Area, Ogun State, Nigeria

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Naturally occurring radionuclides of terrestrial origin exists in every component of the earth. Making humankind to be continuously exposed to ionizing radiation, which is dangerous to human health. Monitoring of environmental radioactivity is very crucial to minimizing exposure above the threshold limit. Consequently, the background radioactivity due to 232Th, 238U, and 40K for some locations in Agbara industrial area of Ogun State was determined using RS230 Gamma Spectrometer (a portable NaI [Tl] detector). The mean activity concentration of the primordial radionuclides ranges between below detectable limit (in Mentos area) and 472.14 Bqkg-1 (Access Bank area) with an overall average value of 177.87 Bqkg-1. The in-situ measured dose rate (DR) ranges between 12. 18 nGyh-1 (Access Bank area) and 97.95 nGyh-1 (Market area), with an average value of 47.22 nGyh-1. The measured and estimated absorbed dose rates were within the safe limit of 57 nGyh-1 provided by UNSCEAR. The mean values of all the estimated radiological parameters were within the recommended threshold values. It could be concluded that the risk of exposure higher level of ionizing radiation is low for all the area in Agbara industrial area of Ogun State, but there is possibility of cancer risk for someone that has stayed in the area for 70 years and above.

Keywords: Environmental Assessment Impact, Radioactivity, Radiological Parameters, Agbara Industrial Estate.

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