

Accepted Manuscript

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PII: S1464-343X(17)30486-7

DOI: [10.1016/j.jafrearsci.2017.12.013](https://doi.org/10.1016/j.jafrearsci.2017.12.013)

Reference: AES 3094

To appear in: *Journal of African Earth Sciences*

Received Date: 27 July 2017

Revised Date: 6 November 2017

Accepted Date: 14 December 2017

Please cite this article as: Miftah, A., El Azzab, D., Attou, A., Manar, A., Rachid, A., Ramhy, H., Geochemical mapping of radioactive elements using helicopter-borne gamma-ray spectrometry (Tiouit, Eastern Anti-Atlas, Morocco): Or occurrence and environmental impact, *Journal of African Earth Sciences* (2018), doi: 10.1016/j.jafrearsci.2017.12.013.

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Geochemical mapping of radioactive elements using helicopter-borne gamma-ray spectrometry (Tiouit, Eastern Anti-Atlas, Morocco): Or occurrence and environmental impact.

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Abstract

The spectrometric prospection is a direct geophysical method based on the analysis of the radioactive elements spectra, due to three principal radioactive elements ⁴⁰K, ²³⁸U and ²³²Th.

In order to measure the content of radioactive elements a geophysical helicopter survey was carried out to a flight altitude of 60 m from the subsoil, covering the geological map of Tiouit 1/50000 with an extent of 45.5×29 Km². In this paper, we propose an application in the environment and or occurrence by the production of maps concentration in K, U and Th to delimit the areas with purely natural radioactive risk by the calculation of the dose rate in mSv, the found values show a variation of 0,3 with 1,649 mSv with a median value of 0,831 mSv. Moreover, data processing as the horizontal gradient filter which allowed to amplify the spectrometric signatures, this one coupled to the upward continuation, lead us to a better

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