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APPLICATION OF TERMITE MOUND FOR URANIUM EXPLORATION IN KAPPATRALLA AREA, KURNOOL DISTRICT, A.P.

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Abstract

The large earthen mounds constructed by termites are a distinctive feature in Gulcheru Quartzite resting unconformably on basement granite of Kappatralla outlier, covering an area of 3.5 sq km in Kurnool district, A.P. The uranium mineralization in Kappatralla outlier lies between two NW-SE trending faults (0.018-0.160% U_3O_8), whereas the non-mineralized zone lies far away from the fault zone (<0.010% U_3O_8). The termite mounds in uraniferous zone are intensely ferruginized, red colored, whereas the termite mounds in the barren zone are earthy in color with less prominent developement.

The distribution pattern of U, Th and K in termite mounds has revealed relatively high content of +uranium (4.72 – 135 ppm), , potassium (0.2 – 2.9%), Th (1.75 -34.26 ppm) and low Th / U ratio (0.03 – 5.35, avg =0.98, N=14) in uraniferous zone, while the termite mounds of the barren zone, show relatively low U (2.54 – 6.77 ppm), %K (0.3 – 2.1%), Th (1.75 – 13.18 ppm) and high Th/U ratio (0.41-6.91, avg=1.66 N= 22)). The observations suggest differential movement of U, K, Th and Fe in the soil that the termites have used to build their nest.

These data have helped in planning subsurface exploration for unconformity proximal uranium mineralization between basement crystallines and the overlying Gulcheru quartzite in Kappatralla area.

Keywords: Cuddapah Basin, Kappatralla, Gulcheru quartzite, Termite mound, Pitchblende, Coffinite