

## **EVALUATION OF UM ARA AREA AS INTRA-GRANITIC URANIUM DEPOSIT, EASTERN DESERT, EGYPT.**

KAMEL, A.F. AND EL AFANDY, A.H. NUCLEAR MATERIALS AUTHORITY, P.O.BOX 530 MAADI, CAIRO, EGYPT.

The Egyptian younger granites belong to the Pan-African plutonism. These rocks are more radioactive than the older granites. In the southern part of the Eastern Desert of Egypt Um Ara granite pluton is a composite mass of coarse grained monzogranite and fine grained alkali feldspar uraniferous granite. The discovery of anomalous radioactivity in Um Ara indicated the importance of the area as best potential for uranium source rock, therefore the Nuclear Materials Authority of Egypt (NMA) started an intensive exploration program in the northern part of Um Ara granite pluton. Detailed work in the mineralized zone of Um Ara area started in 1984 based on the results of air-borne radiometric survey. Uranium mineralization was followed to deeper subsurface levels by deep trenching and drilling. The mineralized zone occupies 5 square kilometer and it is affected by major fault trending N 75 degrees W. This fault is characterized by high density of fracturing.

Uranium mineralization mainly uranophane increases in the subsurface rocks. It is associated with violet and green fluorite and alteration products of iron oxide, manganese oxide and carbonates. Previous work suggests an origin by hydrothermal fluids derived from the granitic magma. Redistribution by circulating meteoric water may have taken place in the shear zone as evidenced by the wide spread of secondary uranium mineralization along the fracture surfaces. The NMA planned to make use of uranium in the rocks collected from the excavated trenches by agitated and column heap leaching.