## Evaporites of the Messinian Salinity Crisis: Natural Radioactivity in the Gessoso-Solfifera Fm of Central Italy from Surface and Subsurface Data

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This paper deals with the natural radioactivity (NRD) of the evaporitic (ev) and post-evaporitic (p-ev) deposits connected with the Messinian Salinity Crisis (MSC) of the Mediterranean area. Gamma-ray profiles have been acquired in the northwestern Maiella area (Abruzzo, Italy), along stratigraphic sections showing late Messinian deposits, by using a Rainbow 7010 MCA gamma-spectrometer.

The field gamma-ray profiles from the Maiella sections have been compared with the gamma-ray log of wells drilled at the Adriatic side of the central Apennines for hydrocarbon exploration.

The Messinian evaporitic deposits of the Maiella composite section consist of a cyclical alternation of selenitic gypsum beds and sapropelitic layers. The gamma-ray log of this succession is characterized by low emission from the evaporitic beds (8-12 Cps) and maximum peaks of NRD from the sapropelitic horizons (33-40 Cps).

The boundary between the evaporitic deposits and the overlying post-evaporitic marls (intra-Messinian unconformity) is evidenced by an abrupt increase of the NRD (20-63 Cps).

The gamma-ray log from wells drilled south-eastern of the Maiella Mts show the same profile of the Maiella composite section, which correlate the Lower Evaporites of the Vena del Gesso (northern Apennines) and Sicily. On the contrary, the Messinian deposits drilled north-western of the Maiella Mts show different gamma-ray profiles, which could be correlated with re-sedimented evaporites.

Key words: atural radioactivity, gamma-ray profile, Messinian salinity crisis, Gessoso-Solfifera Fm, central Italy.