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Integration of remote sensing, geochemical and field data in the Qena-Safaga shear zone: Implications for structural evolution of the Eastern Desert, Egypt

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10 **Abstract**

11 The Qena-Safaga shear zone (QSSZ) represents a significant structural
12 characteristic in the Eastern Desert of Egypt. Remote Sensing, field and
13 geochemical data were utilized in the present study. The results revealed that the
14 QSSZ dominated by metamorphic complex (MC) that intruded by syn-tectonic
15 granitoids. The low angle thrust fault brings calc-alkaline metavolcanics to overlie
16 MC and its association. Subsequently, the area is dissected by strike-slip faults and
17 the small elongated basins of Hammamat sediments of Precambrian were
18 accumulated. The MC intruded by late-to post-tectonic granites (LPG) and Dokhan
19 Volcanics which comprise felsic varieties forming distinctive columnar joints.
20 Remote sensing analysis and field data revealed that major sub-vertical
21 conspicuous strike-slip faults (SSF) including sinistral NW-SE and dextral ca. E-W
22 shaped the study area. Various shear zones that accompanying the SSF are running
23 NW-SE, NE-SW, E-W, N-S and ENE-WSW. The obtained shear sense presented a

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