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A REVIEW OF RECENT DISCOVERIES OF KIMBERLITES AND LAMPROITES IN ANDHRA PRADESH AND TELANGANA STATES, INDIA

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Abstract

Sustained and rigorous investigations conducted by both national and international companies in the last couple of decades, have led to the discovery of several diamondiferous kimberlites in different parts of the country, facilitating exploration success which did not materialize in any other mineral commodity. The involvement of multinational companies,enabled by liberalised economic policies, has unravelled the existence of new pipes which were not considered in the past during detailed geological mapping by Indian Organisations. Consequently, the total number of kimberlite/lamproite pipes had increased to more than 150, occurring in different parts of the Indian Shield, the majority of these discoveries being in Eastern Dharwar Craton (EDC) encompassing Andhra Pradesh and Telangana States. While the new kimberlite discoveries are diamondiferous with better grades than the previously discovered pipes, the lamproites occurring in Andhra Pradesh and Telangana are yet to be economically assessed. Geochemically, the kimberlites of Andhra Pradesh belong to Group-I type consistent with the South African pipes. The lamproites of Telangana show a geochemical character similar to worldwide lamproites. In both kimberlites and lamproites,that have been recently discovered, a conspicuous enrichment of LREE and a depletion of HREE is noticed reflecting probably an analogous source region, coupled with low partial melting conditions in those regions. The discovery of 46 new kimberlite/lamproite pipes/dykes in these states with the aid of enhanced scientific techniques, exemplifies a case of implementing successful exploration strategy in the EDC authenticating it as a fertile geological domain for diamond exploration. This study reviews the geological, geochemical and geophysical aspects and exploration methodology related to recent discoveries of kimberlites/lamproites in last couple of decades in the states of Andhra Pradesh and Telangana that were hitherto not available in literature.

Keywords: Kimberlite, lamproite, diamond exploration, recent discoveries, Andhra Pradesh, Telangana, Eastern Dharwar Craton.