

Biostatigraphic Dating of Volcanic Flows in KD-12 and G-4 Structures in the offshore Krishna-Godavari Basin, India

A. N. Reddy, B. C. Jaiprakash, L. Chidambaram, and K. V. Bhaktavatsala

Deccan volcanism across KPg boundary was the most intense volcanic activity in the geological history. The volcanism has caused severe effects on the biotic mass extinctions across KPg boundary in the marine environments and possibly this volcanism has a linkage to the extinction of dinosaurs at the end of Cretaceous. Deccan volcanism occurred in three major episodes in Deccan province of Indian subcontinent. Keller et al (1995) recognized the first pulse of volcanic flow occurred in the CF4 planktic zone at the lower part of 30N in the magnetic polarity scale, the second and main pulse at the end of CF I planktic zone in the middle part of 20R magnetic polarity and the last pulse happened at P1a/P1b planktic zonal boundary at 29R/29N polarity boundary.

Numerous exploratory wells drilled in onland of KG Basin have encountered volcanics ranging in thickness from 50-120m. Volcanics are encountered for the first time in offshore Godavari in well GDF and in well KDL in the Krishna offshore Basin. Planktic foraminiferal assemblage consists of *Rjornicala*, *Rplummerae* and *G.linneiana* below the phase-2 traps in well GDF are characteristic of CF6 zone. Elsewhere in onland Phase-2 traps occurred in zone CF 1 and thus indicating major hiatus prior to trap flow at this site. Planktics characteristic of Zone P2 overlie the phase-3 trap, suggesting that intertrappeans represent P1a and P1b zones in well GDF. Whereas in well KDL in offshore Krishna basin, planktic foraminifera *Rjrucliosa*, *A.mayaroensis*, *R.conlusa* which are characteristic of CFI zone present immediately below phase-2 volcanic trap. This suggests that phase-2 trap flows occurred in Zone CFI in this part of the basin. The presence of P2 zonal taxa, 8m above the top of trap indicates that phase-3 volcanic flow happened within P I zone. The faunal data suggests that the volcanic flows at these two locations which are wide apart, are coeval. This study also attempts to analyse the benthic foraminifer assemblages to infer the paleoecological and paleobathymetric conditions prior to the arrival of trap flows at these two sites and compares with the equivalent sections in the onland wells to decipher paleogeography of basalt flows.