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TRANSITION OF THE IMPACT TO POST-IMPACT ROCKS IN THE YAXCOPOIL-1 DRILL HOLE: NO EVIDENCE FOR PRE-K/T AGE OF THE CHICXULUB CRATER

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The transition from impact ejecta to post-impact crater-fill sediments takes place in the interval 794.80-794.11m. The core segment comprises a lower interval of cross-bedded and parallel bedded dolomitic sands (794.6-794.19m), overall decreasing in grain size. The dolomitic sands alternate with coarse intervals containing green particles of smectite of glauconite, with a bubbly texture reminiscent of the bubbly texture in altered impact glass found elsewhere. The interval is overlain by an 8 cm thick bored hardground, containing borings filled with clay. A 1cm thick clay layer at 794.11 showing dissolution features overlies the hardground. Hemipelagic micritic sediments, rich in planktic foraminifers of basal Paleocene age, overlie the clay. Polished thin sections from twenty samples were analyzed by electron microprobe and SEM. The relative amounts of Al, Si, K, Ti, Ca, Sr, Mn Fe, Co, Cr, Ni, S, Cl, and Br were measured in the 75cm interval with the second version of CORTEX XRF core scanner (Jansen et al. 1998). Xrf analyses were performed every mm, in total 750 analyses. The layers rich in altered impact glass, now smectite, show peaks in Al, Si, Ti, K, Fe, as expected. Sr displays erratic peaks in the reworked ejecta intervals, probably related to coelestine. The reworked ejecta are generally characterized by higher amounts of Ca and Mn, the post-impact crater fill is relatively rich in Sr, Ti, Fe and particularly Cr. The clay layer at 794.11m, which might be enriched in siderophile elements if it would behave similar to other K/T boundary clay layers, is not significantly enriched in siderophile elements, except Co. Ni and Cr are even depleted, whilst Cr is one of the elements that are invariably enriched in K/T boundary clay together with Ir. In the interval 794.11-794.60m no foraminifers were encountered, but only dolomite grains

overgrown by idiomorphic-zoned dolomite. Calcite occurs as sparitic pore-fillings, together with occasional idiomorphic quartz, coelestite and K-spar crystals. In the pore-space between the dolomite no micrite could be demonstrated. These findings indicate that the Cretaceous foraminifers found by G. Keller are probably malformed dolomite crystals that mimic foraminifers because the idiomorphic overgrowth has the same thickness as a foraminiferal test-wall.