



Biostratigraphy and distribution of calcareous nannofossils of the Miocene rocks from the onshore Mallaha-1X and Abu Roda-1 wells, northwestern Sinai, Egypt

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Eleven calcareous nannofossil biozones were recorded from the cuttings of the studied wells. The zone are arranged from the base to top as follow: *Discoaster drugii* Zone (NN2), *Sphenolithus belemnos* Zone (NN3), *Helicosphaera ampliaperta* Zone (NN4), *Sphenolithus heteromorphus* Zone (NN5), *Discoaster exilis* Zone (NN6), *Discoaster kugleri* Zone (NN7), *Catinaster coalitus* Zone (NN8), *Discoaster hamatus* Zone (NN9), *Discoaster calcaris* Zone (NN10), *Discoaster quinqueramus* Zone (NN11) and *Amaurolithus tricorniculatus* Zone (NN12).

In the Mallaha-1X, the late Oligocene *Sphenolithus ciperoensis* Zone (NP25) is unconformably overlain by the Zone NN2 up to Zone NN8. The latter is unconformably overlain by Zone NN10 up to Zone NN12. Therefore, a small hiatus is present between the middle and late Miocene due to the absence of Zone NN9 in the Mallaha-1X.

In Abu Roda-1, the NN2 up to NN4 are recorded. The latter is overlain by NN9 up to NN12. A large hiatus presents in this well due to the absence of the Middle Miocene nannofossil Zones NN5 up to NN8.