Cretaceous (Early Maastrichtian - Aptian) stratigraphy of the Shiranish Islam area, northern Iraq

Packer, S.1,*, Canner, K.2, Chalabi, A.2

1) Millennia SC Ltd., Wingrave, Buckinghamshire, UK, *E-mail: s.r.packer@btinternet.com
2) DNO ASA, Oslo, Norway

The Cenozoic and Cretaceous succession of north-west Iraqi Kurdistan is exposed in outcrop in the Derker Ajam and Shiranish Islam area just to the north of Zakho. The exposed Paleogene to Lower Cretaceous succession includes the Anah, Pila Spi, Gercus, Khurmala, Kolosh, Shiranish, Mergi and Qamchuqa Formations. This area is well documented in literature and contains the Iraq type section localities for the Shiranish and Mergi Formations (Van Bellen et al., 1959). Since 2003 the area has been studied by DNO field teams as part of wider regional geological studies. This study focusses on the Cretaceous interval including the Shiranish, Bekhme, Mergi and Qamchuqa Formations. The status of the ‘Turonian’ Mergi Formation has been the subject of some discussion since the 1960’s. A number of historical papers include some reference to the stratigraphy, sedimentology, and micropalaeontological records from the Cretaceous succession, though this is largely piecemeal and is often wholly or partially derived from the original fieldwork descriptions from early IPC (Iraq Petroleum Company) reports in the 1940’s and 1950’s.

The primary aim of this study is to provide a concise biostratigraphic record of the Shiranish, Bekhme, Mergi and Upper Qamchuqa Formations based on detailed field sampling and biostratigraphic analysis of multiple logged sections. Six separate sections were logged and sampled within the Shiranish Islam area. Two hundred and sixty-seven samples for biostratigraphic analysis were collected at c. 1 m intervals allowing for suitable exposure. Over critical boundaries the sampling density was reduced to in order to capture small scale changes across potential hiatal or condensed surfaces. Samples collected from the Bekhme and Qamchuqa Formations comprise mostly limestones that are variably dolomitised/re-crystallised and as such are only suitable for thin-section micropalaeontological analysis. Thin-sections analysed contain well preserved faunas and floras throughout comprising rich assemblages of benthic and planktonic foraminifera, calcispheres, ostracods, calcareous algae and macrofossil debris. Nannofossil recovery is very poor due to the effects of re-crystallisation and dolomitisation, and low organic yield results in generally poor recovery of palynomorphs. The interbedded limestones and marls of Shiranish Formation were analysed for thin-section and routine micropalaeontology, nannofossils and palynology, with all disciplines yielding good floras and faunas. Based on the new biodata generated an updated stratigraphic model for the succession is presented.