Top Pre-Permian distribution map & some thematic regional geologic maps of the Netherlands

Recently an increased effort is made to compile thematic maps within TNO-NITG. These maps are the backbone of numerous petroleum geological evaluations carried out for the Ministry of Economic Affairs. Such evaluations are for example: analysis of the remaining prospectivity of the Netherlands or estimating the future production and gas quality profile from known and yet unknown prospects. These maps are either directly used as a play element map or they serve as a background map for the compilation of other maps to for example confine data to specific regions or impose trends on datasets while contouring.

The map is based on released well and seismic data. All wells penetrating the Carboniferous were interpreted lithostratigraphically aided by (if present) biostratigraphical information. Most of the wells were interpreted down to the detail of Formation or even Member. Others wells could not be interpreted in such detail because of limited Carboniferous penetration.

Further research effort will be made to improve the dataset the inter- and extrapolation while honouring trends or data from other maps like the maturity or top Pre-Permian map.

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The Magnetic anomaly map (fig 5)

This thematic map shows the distribution of the uppermost lithostratigraphic formation of the ‘Pre-Permian’. In the largest part of the mapped area it can be defined as the base Rotliegend subcrop map. The map is based on released well and seismic data. All wells penetrating the Carboniferous were interpreted lithostratigraphically aided by (if present) biostratigraphical information. Most of the wells were interpreted down to the detail of Formation or even Member. Others wells could not be interpreted in such detail because of limited Carboniferous penetration.

This thematic map is created using the free-air anomaly from public domain datasets (Knmi/Rietman 1987 & Ruu 1979) (courtesy of J. Verhoef & W. Roest). The datasets were gridded using a simple ‘IDW with fixed radius’ method. On the map known occurrences of igneous rocks are plotted. In some cases a straight forward correlation between the map and the well data is apparent such as the well known Zuidwal volcano. At the border of blocks F16 and F17 a similar anomaly/volcano is present as evidenced by the occurrence of the Wadden Volcanoclastics Member in well F16-2. The correlation of the Lower Rotliegend Volcanics in the east of Drenthe is less obvious.

This thematic map can be used for example: high volume reflectance values with a low correlation length and the compilation of play maps and depositional models for Upper Jurassic and Cretaceous strata.

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