

Stratigraphy and chronology of the Maasvlakte 2 sand extraction pit

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We present the results of a high-resolution multidisciplinary study of a set of continuous boreholes from an offshore sand extraction pit located west of Maasvlakte 2. The boreholes are (partly) positioned on the dipping flank of the pit and provide a high-resolution insight in the sediment record of this area up-to a depth of ~45m below mean sea-level (Fig. 1) The boreholes were sedimentary analysed, photographed and subsequently sampled for biostratigraphic (pollen, malacology, macro- and microfossils), provenance (mineralogy, gravel) and chronological analysis (quartz-feldspar OSL). The borehole data allowed identification of seven stacked sedimentary units of fluvial and (possibly) tidal origin (Fig. 1). Below ~-31m depth, the pit stratigraphy consists of Middle Pleistocene coarse-grained gravelly sediments of Rhine-Meuse origin (MV2-6&7). Late Pleistocene sediments occur between ~-31m and -27m and consist of an alternation of coarse-grained gravelly sands (MV2-3&5) and finer-grained sediments (MV2-4). Several of these units are rich in marine molluscs. The top section of the pit is made up of Holocene sediments (MV2-2) and sediment that were deposited during and directly after the extraction process (MV2-1).

At the symposium we will present the latest stratigraphical insights, the results of the OSL dating campaign and the implications of our study for the larger scale palaeogeographical development of the southern North Sea area.

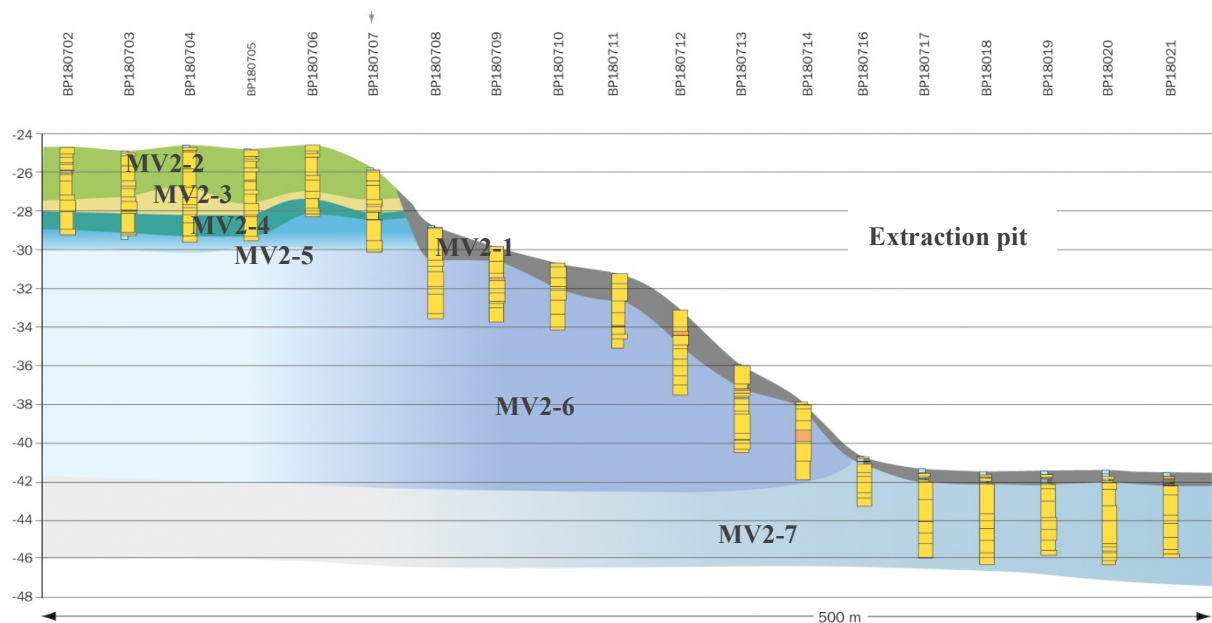


Figure 1: Profile over the extraction pit showing the sedimentary units of Middle Pleistocene, Late Pleistocene and Holocene age. Depth in meters below mean sea-level. Boreholes are plotted equidistantly,