

## **Schoonebeek 3D Hi-Res Acquisition & Processing: How dense spatial sampling leads to excellent well ties**

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The **Schoonebeek Oil Field**, located in the eastern part of the Netherlands, is Europe's largest onshore oilfield. The field was discovered in 1943, shut in since 1996 and in the final stages of being abandoned. The field STOHP amounts to 165 mln m<sup>3</sup> oil, with to date 40 mln m<sup>3</sup> recovered from 599 production and injection wells drilled on a 250 m spacing. The reservoir comprises the 0-50m thick, darcy-permeability Bentheim sands. The Schoonebeek Field is currently re-developed using steam injection through a system of 70+ horizontal injector and producer wells. In the redevelopment area the Bentheim sandstone thickens towards the east, with a relatively constant 16-30m thickness.

A critical element for this re-development is an optimal positioning of the horizontal injector and producer wells in the shallow Bentheim reservoir (TWT 800 ms). The original 3D seismic, a number of different surveys acquired from 1983-1996, comprises a large structural uncertainty at reservoir level. The new hires 3D seismic that has been acquired in 2005/06, has greatly reduced this uncertainty. This paper contains an overview of the differences in acquisition and processing between the standard and Hi-Res acquisition and processing parameters.

Recent seismic processing work on the Hi-Res data set has tried to further improve the temporal resolution. This has not yet provided the results that have been observed with the same workflow on deep marine seismic data sets. However, recently drilled wells have shown an excellent match between the seismic and the wells.