# Shah Deniz Oil Terminal (Phase 2)

## Buildings and Industrial Installations

Jan. 2013 - Dec. 2014

**AZERBAIJAN - Baku**

**Client**

**ENTREPOSE PROJETS**

**Amount of services**
550 000 €

**Mission type**
Design Engineering

## Description of the project

The Shah Deniz phase 2 project is intended to extend the existing Sangachal land-based gas processing and oil production terminal operated largely by BP. The terminal is located on the banks of the Caspian Sea, 50 kilometres south of Baku in Azerbaijan. The new gas and oil refinery will be adjacent to the existing one.

**Key features**

- Analysis of soil conditions and design of the tanks foundations

## Description of the mission

The extension will include in particular a new gas production platform with a capacity of 16,000 billion m3 per year, with two additional auxiliary gas processing trains. It requires the construction of seven hydrocarbon product storage tanks.

The particularity of the site lies in the presence of “collapsible” soil with a thickness of 6 to 8 m. This surface layer mainly consists of sand grains bound in a silty-clayey matrix. The composition also includes volcanic compounds. This layer presents the distinctive feature of containing a lot of void and being sensitive to water addition. Wetting this layer causes it to collapse on itself with or without extra load. Conversely, in the natural state, this layer is naturally protected by a crust and presents what could be described as good quality mechanical characteristics.

During the construction and operation of the extension, the protective crust may be damaged and the surface layer may thus get wet. Accidents, which have already occurred in the past on the existing terminal, may also cause wetting of this surface layer. To limit future settlement problems, the storage tanks will be founded on piles reaching the lower layers.

In this special and rare context, ENTREPOSE PROJETS SAS entrusted TERRASOL with the geotechnical part and SETEC TPI with the structural aspects of the detailed design of the storage tank foundations.

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