

Title (en)

FLOATING SEMI-SUBMERSIBLE OIL PRODUCTION AND STORAGE ARRANGEMENT

Title (de)

SCHWIMMENDE, HALBTAUCHENDE ANORDNUNG ZUR PRODUKTION UND LAGERUNG VON ÖL

Title (fr)

DISPOSITIF FLOTTANT SEMI-SUBMERSIBLE DE PRODUCTION PETROLIERE, DE STOCKAGE ET DE DECHARGEMENT

Publication

EP 1476351 A1 20041117 (EN)

Application

EP 03706693 A 20030211

Priority

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Abstract (en)

[origin: WO03070562A1] An arrangement for the storage of marketable quantities of crude oil at a semi-submersible floating production vessel. The storage is achieved by hanging a segmented reinforced concrete tank (2) to the underside of the semi-submersible vessel. The semi-submersible vessel can be an existing semi-submersible drilling rig. By maintaining the mass of the tank and contents slightly greater than the displacement of the tank and by arranging the centre of gravity of the tank below its centre of buoyancy, the metacentric height of the semi-submersible vessel is approved. The storage arrangement for the oil provides the necessary maintenance of mass by either storing approximately 4/5 of the oil in oil-over-water chambers and approximately 1/5 in gas-over-oil chambers or by using a gas-over-oil-over-water arrangement in all the chambers. The piping arrangements minimize the free surface of liquids in the tank. The design ensures the internal pressure in the tank can be less than the external pressure which minimizes required reinforcement. The design provides a net positive suction head to oil export pumps located above the storage tank in a location which allows easy maintenance. The design allows all pumps, valves and instrumentation necessary for handling ballast water to be maintained within the hull of the semi-submersible where they can be easily maintained. The design allows all the valves, pumps and instrumentation necessary for handling oil to be in locations where they can be easily maintained.

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