

PROJECT SHEET

BOSKALIS OFFSHORE SUBSEA SERVICES
PORT SUDAN, SUDAN

INTRODUCTION

Boskalis has been working in Port Sudan at the Red Sea since 1999. We have been assisting the different consortium partners with providing maintenance to subsea assets in line with IMCA guidelines via its supervisory personnel, dive teams and ROV teams on both Marine Single Point Mooring (SPM) Terminals (GNPOC and PDOC) under different contracts.

Previously the manpower provided were made up of BOSS ME-trained Sudanese nationals, who are employed (supplied) by S&P JV partner Sudan Ports Corporation (SPC) as well as BOSS ME personnel. The contract originally commenced in August 1999 by AFM Diving and Marine Services (SMIT). Management of this contract was transferred to SMIT Terminals in 2008.

Since June 2013, S&P JV has operated both SPM Terminals. BOSS ME expanded subsea services from PDOC Terminal to include GNPOC terminal for S&P JV. As from January 2015 BOSS ME only provides subsea support to S&P JV on the PDOC SPM Terminal.

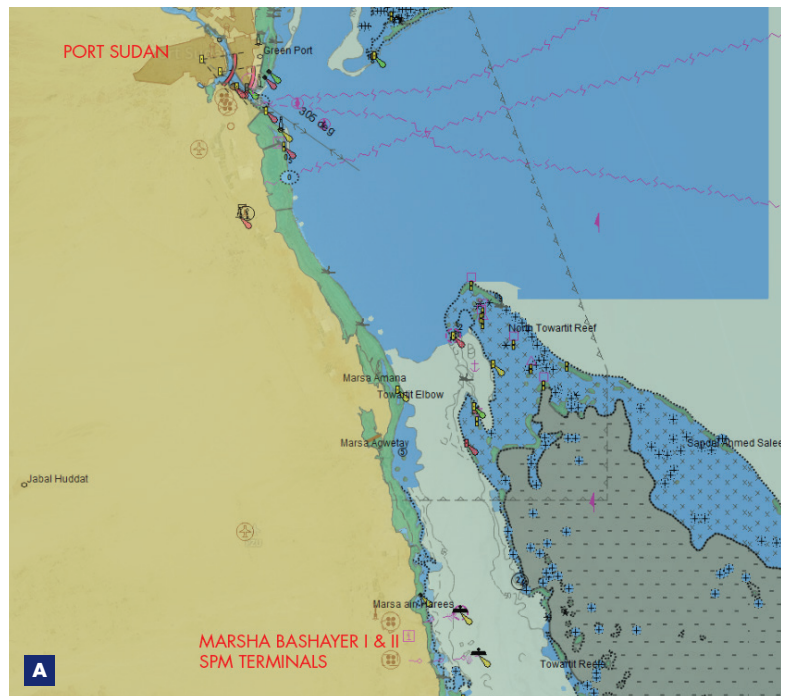
The SPM on the GNPOC terminal is located approximately 1km from the shoreline at a water depth of 55 m. The PDOC SPM being located approximately 1km from the shoreline at a water depth of 74 m.

BASHAYER MARINE TERMINAL 1 (GNPOC)

On 18th of June 1997, Greater Nile Petroleum Operating Company Limited (GNPOC) was incorporated to operate as petroleum company in

FEATURES

Client	S&P JV Offshore
Location	Port Sudan, Sudan
Project number	BIMS8320 & J-1449
Period	October 1999 – June 2016

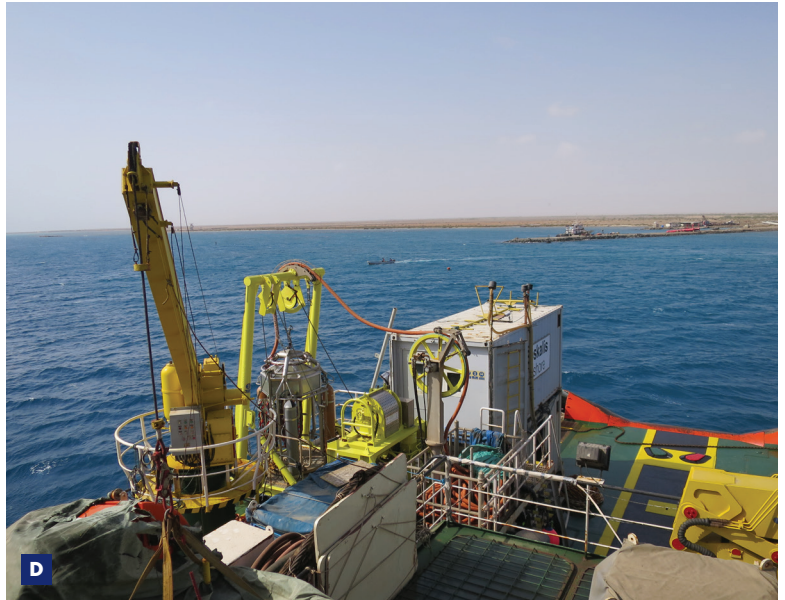


A Location map Port Sudan and Bashayer I & II SPM Terminals
B Bashayer II SPM





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Sudan. GNPOC used to be a joint operating company owned by CNPC of China (40%), PETRONAS of Malaysia (30%), ONGC of India (25%) and SUDAPET of Sudan (5%).

GNPOC used to produce more than 300,000 barrels of oil per day. More than 15,000km pipeline was constructed to the Bashayer SPM Terminal.

BASHAYER MARINE TERMINAL 2 (PDOC)

The PetroDar Operating Company Ltd (PDOC) is a consortium comprising of the China National Petroleum Corporation (CNPC) (41%), Petronas of Malaysia (40%), Sudapet of Sudan (8%), SINOPEC of China (6%) and Tri-Ocean Energy of Kuwait (5%). PetroDar operates the Melut oil export pipeline, also known as the PetroDar Pipeline. The pipeline connects the oil fields of the Melut Basin with the refinery and export terminal located at Port Sudan.

As the oil produced from the PDOC concessions is viscous, this crude oil for export is heated and then transferred via the 48" headers using the booster pumps and subsequently passing through metering skid and suction of the shipping pumps. The crude enters the 2x 36" export pipelines and is loaded in to tankers via the CALM system. The overall offshore SPM, under normal operation, is used to take conventional 300,000 DWT tankers. The export capacity is up to 2,000,000 bpd with 3 pumps in operation.

SCOPE OF WORK

Boskalis' scope of services for S&P JV includes provisions of Diving (Air and Mixed Gas) and ROV services. Related mobilization of equipment and personnel and intervention works (Emergency and larger scale PMS activities). The following aspects form part of this scope of work:

- SPM Inspection Repair and Maintenance (IRM);
- SPM Buoy maintenance including mooring-chain connection, disconnection and tensioning, chain angle measurement, inspection and replacement of subsea and floating hoses;
- Hose inventory management including hose testing, storage, inspection and testing related to the SPM;
- Terminal marine supervision services monitoring the condition and planned maintenance schedules related to the SPM;
- Monitoring Terminal regulations and assistance with the tanker nomination, connection and loading related to the Terminal operator requirements;
- The marine terminal operate Oil Spill Response (OSR) contingency, this involves available equipment (oil booms), planned maintenance systems and regular drills.



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- C** Dive supervisor working in dive control
- D** Dive system deck view on terminal support vessel
- E** Terminal support vessel with BOSS ME diving system

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