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PRESS RELEASE

Subsea 7 presents papers on New Deepwater Construction Equipment and Improved Pile Driving Predications at OTC 2012

Subsea 7, a global leader in seabed-to-surface engineering, construction and services to the offshore energy industry, will deliver papers on 'New Deepwater Construction Equipment' detailing the 5,000t mast crane as on the Company's new vessel, the *Seven Borealis*, and on 'Improved Pile Driving Predications in Carbonate Soils and Rock'. Both papers will be delivered on the third day of this year's Offshore Technology Conference (OTC), in Houston, USA, on 2 May.

Subsea 7's new flagship pipelay and heavy lift vessel, the *Seven Borealis*, will go to work on Total's deepwater CLOV development in offshore Angola when she joins the fleet later this year (2012). The vessel's 5,000t crane, with the top of the mast reaching 150m above the main deck, is the world's largest offshore mast crane. With the crane's full heave compensated deepwater lowering system it is an efficient mechanism for the installation of heavy loads required for deepwater subsea production systems.

Subsea 7 Geotechnical Discipline Manager Paul Brunning will deliver the paper on improving pile driving predictions in carbonate strata. It is particularly important to gain installation experience in carbonate conditions such as in the Australian north-west shelf where significant oil and gas developments are planned. The study, using data from a pile installation in the Timor Sea, supports modifications that may be made to existing soil resistance to driving algorithms to improve reliability to predictions.

ENDS

1 May 2012

PRESS RELEASE

Paper Ref OTC 23462

Special Session: New Deep Water Construction Equipment - A Vision for the Future / Design considerations and equipment details of the 5,000 T Mast Crane of the deepwater pipelay and heavy lift vessel *Seven Borealis*

Abstract
The paper will address the application of the 5,000t mast crane onboard the *Seven Borealis*. Its innovative design and special features render it a unique tool in deepwater construction wherever larger structures are being installed in ever deeper water and increasingly hostile environments.

Other than the dedicated heavy lift vessels available in the market, most of the SURF pipelay and construction vessels have limited crane capacities while specialising in installation of SURF product in deepwater only. The mast crane onboard *Seven Borealis* has a capacity normally only found on dedicated heavy lift vessels and combines that with the capability of installing SURF product (rigid pipe via S-lay and J-lay, flexible and umbilical's) in deepwater. As a result, the mast crane onboard *Seven Borealis* bridges the gap between SURF installation capabilities and heavy lift.

Most cranes having a capacity over 2,000t are large derrick cranes. This paper will address some of the unique design features of the mast crane onboard *Seven Borealis*.

Paper Ref OTC 23232

Improved Pile Driving Predictions in Carbonate Soils and Rock

Abstract
Driving piles into carbonate strata, particularly weak rock (calcarenite) and cemented sands is traditionally thought to carry high risk in terms of premature refusal, exceedance of fatigue criteria or pile tip buckling. Although soil resistance to driving (SRD) algorithms have been developed for carbonate deposits they are based on limited experience (primarily Arabian Gulf) and there is a need to expand this database to include installation experience elsewhere in carbonate conditions such as the Australian north-west shelf where significant oil and gas developments are planned.

Much of the uncertainty surrounding the prediction of pile driving in carbonate strata can be attributed to the difficulty in establishing a reliable and continuous soil resistance profile which is primarily due to i) the difficulty obtaining suitable samples of rocks such as calcarenite for compressive strength testing, and ii) the equipment limitations for pushing cone penetrometers into weak rock.

It is standard industry practice to base hammer selection, fatigue damage analyses and driveability assessments on upper bound plugged conditions which, for weak

rocks such as calcarenite, gives significantly higher resistances than for the unplugged case and this can lead to the conclusion that driving is either completely unfeasible or not possible beyond a certain depth.

This study presents data from a pile installation in the Timor Sea to support modifications that may be made to existing SRD algorithms to improve reliability of the predictions, at least for this particular site. Back-analyses of the installation data show that unplugged conditions are far more likely to prevail when driving a large diameter pile which suggests that automatically assuming plugged conditions is over-conservative. Possible correlations between cone tip resistance and unconfined compressive strength (UCS) of calcarenite are made by fitting SRD algorithms that require UCS as an input to those that are based on cone tip data.

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Notes to editors:

1. Subsea 7 will have a major presence at this year's event. As well as presenting conference papers, it will be exhibiting at stand 1641. On display will be examples of the Company's deepwater and ultra-deepwater technical expertise and its investment in its fleet.
2. Subsea 7 S.A. is a seabed-to-surface engineering, construction and services contractor to the offshore energy industry worldwide. We provide integrated services, and we plan, design and deliver complex projects in harsh and challenging environments.
3. For further information visit www.subsea7.com