







## **Browse LNG Development**

### Gigas 2D Pilot Ocean Bottom Cable Marine Seismic Survey

November 2007

As part of Woodside's appraisal studies for the Browse LNG Development, a two-dimensional (2D) Pilot Ocean Bottom Cable (OBC) Marine Seismic Survey, known as Gigas, has recently been referred to the Commonwealth Department of Environment and Water Resources (DEW) for approval under the Environmental Protection and Biodiversity Conservation Act. The survey will be undertaken over the North Scott Reef lagoon.

The proposed Gigas survey is designed to provide 2D seismic data over a limited area covering the portion of the Torosa gas field that lies beneath the North Scott Reef lagoon. The pilot survey will test the ability of the OBC technique to gather usable sub-surface seismic data

The proposed survey will consist of six separate seismic lines, to be acquired over a period of about 30 days sometime in the first half of 2008. Further seismic surveys in the area may be required at a later date.

The Gigas seismic survey data will provide Woodside with important insights into the geological structure of the field and help determine the amount of gas potentially contained in the Torosa gas field.

An Environment Plan (EP) will be submitted to the Western Australian Department of Industry and Resources (DoIR) before the survey commences and subsequent to a decision on the referral by the DEW.

## Stakeholder consultation

Woodside supports an active and transparent approach to ensure all stakeholders have access to and are informed about our activities.

Should you wish to receive further information about the proposed Gigas 2D Pilot OBC Marine Seismic Survey, or other aspects of the Browse LNG Development, please do not hesitate to contact us.

The referral for Gigas was recently submitted to DEW. Public comment is open until 23 November 2007. The referral can be viewed at http://www.environment.gov.au/cgi-bin/epbc/epbc\_ap.pl?name=current\_referrals&limit=7&text\_search=

## How does Ocean Bottom Cable seismic work?

Seismic surveying is a commonly-used technique in the oil and gas industry. It has been conducted in a safe and environmentally acceptable manner at Scott Reef in the past.

The OBC technique is required to acquire seismic in the shallower areas of Scott Reef because traditional towed streamer seismic acquisition is typically limited to water depths greater than 10 metres.

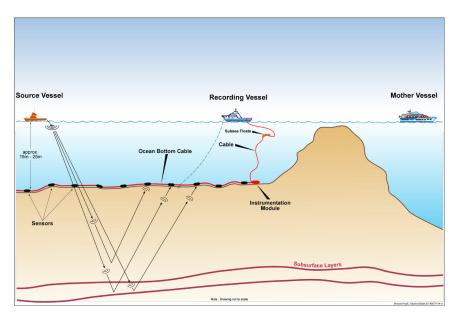
The OBC technology differs from conventional marine seismic surveys. Receivers and their connecting cables are laid out one at a time on the sea floor, rather than being towed through the water behind a survey vessel.

The cable will be retrieved by lifting them off the seafloor using a hydraulic puller mounted on the bow of each vessel.

The proposed airgun array will include up to four air guns, towed closely behind a source vessel at a depth of about five metres. This

source array will be significantly smaller than a conventional marine seismic source which will reduce the sound energy received by marine life.

Seismic data from the receiver array will be recorded onboard a dedicated recording vessel to be located nearby.



Schematic of the proposed Gigas Pilot 2D OBC Seismic Survey technique



#### **Environmental considerations**

Woodside, as operator of the Browse LNG Development, is committed to minimising its impact on the environment and will work with a specialist contractor with extensive experience in conducting shallow marine seismic survey operations in sensitive marine habitats.

A detailed environmental risk assessment has been undertaken for the survey to identify potential environmental impacts and determine the most appropriate mitigation and management measures. The survey will also be conducted in accordance with guidelines and regulations to meet the requirements of DoIR and the Petroleum (Submerged Lands) Act 1967 (P(SL)A). The environmental aspects of this survey will be assessed and managed in accordance to the requirements of the Petroleum (Submerged Lands) (Management of Environment) Regulations 1999 and will include the development and implementation of strict procedures to minimise environment impacts. Specific environmental issues relating to interaction with whale and other cetaceans will be managed in accordance with DEW requirements.

The recent Maxima 3D Marine Seismic Survey conducted predominantly in the southern lagoon of Scott Reef demonstrates Woodside's commitment to best practice environmental management and monitoring.

# Legend Ocean Bottom Cable Shot Lines (will overlie OBC positions during the survey) Bathymetric Contours Scott Reef Bathymetry Model Rev.2 Metadata DRIMS-#3202145 ver2 B. Zakrzewska/ 27Oct2007 / Drims-#3680562-1

Proposed Gigas Pilot 2D OBC Seismic Survey Lines

## Woodside's history in the Browse Basin

Woodside has been active in the Browse Basin since 1963, when exploration permits covering an offshore area of 357,000km were first granted. After many years, extensive exploration and substantial expenditure, Woodside's commitment to the region was rewarded with the discovery of three gas fields between 1971 and 2000 - Torosa, Brecknock and Calliance.

These three gas fields are located near Scott Reef, 400km north-west of Broome in Western Australia. The Browse LNG Development which proposes to develop the fields, is a joint venture involving Woodside as operator, in partnership with BHP Billiton, BP, Chevron and Shell.

Work to date indicates that the three Browse gas fields could together contain about 20 trillion cubic feet of gas.

The current field appraisal, technical, social and environmental studies will support the Browse Joint Venture in its aim to select a preferred location for the LNG facility in the second half of 2008.

#### Contact

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