Wanaea-11 Subsea Installation Environment Plan Bridging Document Summary

This summary of the Wanaea-11 Subsea Installation Environment Plan Bridging Document has been submitted to comply with Regulation 11(7)(8) of the *Petroleum (Submerged Lands)(Management of Environment) Regulations 1999.*

1. INTRODUCTION

Woodside Energy Ltd (Woodside) proposes to extend the development of the Wanaea Cossack Lambert Hermes (WCLH) Area by drilling a new development well, Wanaea-11 (WA-11). The scope involves tying back the Wanaea-11 well to an existing subsea manifold and hydrotesting of components. The well is located in Production Licence WA-11-L.

Subsea installation activities will commence in November/December 2009 for an expected duration of approximately two weeks. The work will be performed by the Diving Support Vessel (DSV) *REM Etive,* operated by a joint venture between TSMarine Pty Ltd and DOF Subsea Australia Pty Ltd.

The subsea installation activities are part of the wider development activities on the Cossack Pioneer (CP) Floating, Production, Storage and Offloading (FPSO) vessel and as such, the environmental risks and management thereof are described in the revised Cossack Pioneer FPSO Environment Plan approved by the then Department of Industry and Resources in November 2007. The Wanaea-11 Subsea Installation Environment Plan serves as a bridging Environment Plan to the Cossack Pioneer FPSO Environment Plan and describes the well-specific details such as well location, installation and pre-commissioning scope, and support vessel activities.

2. DESCRIPTION OF ACTIVITY

2.1 Location and Timing

The proposed Wanaea-11 production well is situated in Production Licence WA-11-L (Figure 1), located approximately 134 km north north-west of Karratha, 132.5 km northeast of the Montebello Conservation Park and 162 km northeast of Barrow Island. Table 2.1 summarises the well details including surface coordinates, water depth, permit area and timing for the proposed well. The schedule is subject to change due to operational requirements and external influences such as cyclones.

Table 2.1 – Well Co-ordinates, Water Depth and Timing (GDA 94, MGA zone 51)

Well	Water Depth (m LAT)	Easting (Longitude)	Northing (Latitude)	Production Licence	Timing
Wanaea-11	80	440 830.2 m E	7 833 549.4 m N	WA-11-L	Q4 2009

The Wanaea-11 subsea installation scope comprises the following key activities:

- Installation of 6-inch flexible flowline production jumper between the new wellhead and existing Wanaea #1 manifold;
- Installation of 2.5-inch flexible flowline gaslift jumper between the new wellhead and the existing Wanaea #1 Gas Lift End Skid structure;
- Installation of control umbilical jumper between the new wellhead and the existing W1M;
- Installation of flowline and umbilical crossings;
- Pre-commissioning and testing of new facilities;
- Changeout of existing subsea control modules (SCMs) at the relevant subsea manifold if required.

3. DESCRIPTION OF THE ENVIRONMENT

3.1 Physical and Biological Environment

The location of the proposed Wanaea-11 well is typical of the Cossack Pioneer / NWS area. The water depth on the continental shelf of the NWS area ranges between 50 and 1,500 metres. The seabed is generally characterised by deep (>5m), soft, silty sediments which become softer and finer with increasing depth.

Few significant environmental resources are expected to be located in the immediate vicinity of the well site, situated in approximately 80 metres of water. The benthic community is expected to be similar to other locations on the NWS which is characterised by low density infauna consisting of mobile burrowing species, including molluscs, crustaceans, and polychaete, sipunculid and platyhelminth worms.

A number of whale species may be encountered in the region, including Pygmy Blue, Sperm and Humpback Whales. The proposed WA-11 well location is within the known Humpback Migratory path and subsea installation activities are planned to commence during the end of the known southbound migration period.

3.2 Social Environment

The Woodside permit/licence areas are beyond the range of nearshore fisheries (e.g. prawn fisheries) that operate between the North West Cape and Port Hedland. However, the permits do occur within the Pilbara commercial finfish area, which extends across the Pilbara from east of Port Hedland as far west as North West Cape. This is a low output but complex fishery which incorporates trawl fishing, trap fishing, line fishing, trolling and shark fishing.

Commercial fishing is the primary non-petroleum related activity which occurs within the North West Marine Region. There are also several WA State-managed wild-stock commercial fisheries and aquaculture leases which are permitted or exist within the permit/licence areas.

There are no tourism activities in the vicinity of any of the Woodside permit/licence areas.

4. ENVIRONMENTAL RISK ASSESSMENT

4.1 Methodology Description

A risk assessment was undertaken for the Wanaea-11 subsea installation activities. The risk assessment process demonstrated that identified hazards/activities associated with the proposed Wanaea-11 well subsea installation were assessed as medium or low. There were no hazards identified above a medium risk level. The proposed Wanaea-11 well subsea installation will not result in any additional environmental risks or changes to risks outlined in the Cossack Pioneer FPSO Environment Plan.

The environmental risks identified as medium for this campaign are related to chemical discharges during flexible flowline installation and commissioning, Cetacean interactions, and introduction of invasive marine species from equipment and vessels during mobilisation.

Risk reduction and management actions (control and mitigation measures) will be implemented to ensure that the risk levels remain tolerable.

Small volumes of pre-commissioning chemicals will be used during this campaign. The fluids displaced during flushing of the two new subsea jumpers will be processed via the Cossack Pioneer FPSO. Processing and management of these fluids within the production system is covered in the Cossack Pioneer FPSO EP. The volumes are not significant to impact on the FPSO operations. Hydraulic control fluid from the valve actuation at Wanaea-1 Manifold will be discharged. This fluid is water soluble and small volumes are discharged to sea (by design) each time a remotely-operable valve is closed. The use of hydraulic fluid for subsea control equipment has been described and accepted in the Cossack Pioneer FPSO EP.

The presence of vessels during the Wanaea-11 well subsea installation may impact cetaceans. The proposed Wanaea-11 area does not contain any recognised significant breeding or aggregation areas for threatened or migratory species within the immediate vicinity of the operational areas. November is considered the end of the known southbound migration period for Humpback whales in the region. The zone of impact is small; any deviations to their migratory path will be slight and do not represent a significant change in migratory pathway. In the event that a whale is encountered, the vessel and personnel will comply with the 2005 Whale Watching Guidelines and Regulation 8 of the *EPBC Act 1999*.

An Invasive Marine Species (IMS) Risk Assessment will be conducted to determine the level of risk of activity by the DSV *REM Etive*. The vessel will be operating in deep water where there is less likelihood for IMS to survive and establish. The IMS management measures will be implemented commensurate with the risk assessment outcomes. The vessel will comply with the AQIS Australian Ballast Water Management Requirements.

5. SUMMARY OF MANAGEMENT APPROACH

Woodside's environmental management strategies and procedures to be adopted during the subsea installation activities include responsibilities, training, reporting frameworks, mitigation and response activities, and monitoring procedures. Commitments associated with these will be used to reduce environmental risk to as low as reasonably practicable (ALARP).

The key management objectives and criteria to be applied during the subsea installation program are summarised in Table 5.1 below.

Table 5.1: Management Objectives and Criteria for Wanaea-11 Subsea Installation Activities

Management Objective	Criteria
Minimise disturbance to the seabed and benthic habitats.	• Recording and reporting of all items lost overboard. • No anchoring of vessels at Project Location. • Management procedures and commitments detailed in the Cossack Pioneer FPSO EP.
Minimise disruption to transient marine life.	• Compliance with EPBC Act Regulation 8 – Interacting with Cetaceans and Whale Watching. • Whale sighting reports completed. • Briefing of all project personnel on environmental sensitivities, management procedures and commitments detailed in the EP.
Minimise impact of chemically treated water discharges on the environment.	• Compliance with pre-commissioning procedures. • Verification that concentration and volume of chemicals used was consistent with EP. • All equipment inspected and operating correctly. • Pre-commissioning and commissioning discharges will be processed via Cossack Pioneer FPSO.
Minimise impact of routine waste discharge on marine environment.	• MARPOL/OPGGSA waste management requirements followed. • Vessel Waste Log Form completed, indicating quantities of sewage and food waste discharged overboard.
Minimise potential impacts of solid and hazardous wastes on the environment.	• Segregation of solid and hazardous wastes in accordance with the Vessel Waste Management Plan. • A vessel Waste Log Form is kept detailing quantities of wastes transported ashore. • Procedures comply with MARPOL requirements.
Minimise occurrence and effects of hydrocarbon and chemical spills.	• Procedures comply with MARPOL 73/78 requirements. • MARPOL Oil Record Book kept up to date. • Fuel spill contingency procedures are in place and operational. • Sufficient spill response equipment on board.

Management Objective	Criteria
	• Appropriate actions are taken to avoid pollution.
Minimise interference with commercial fishing and shipping.	• Consultation with WAFIC. • Notification of AMSA via the Rescue Co-ordination Centre (RCC). • Issuing of standard warnings to shipping via RCC. • Radio contact with approaching vessels.

6. CONSULTATION

Woodside has an extensive history on the North West Shelf, and has developed a sound understanding of potential stakeholder concerns that may arise during subsea installation activities in the area.

For this Wanaea-11 subsea installation campaign, Woodside will consult with key stakeholders during the preparation of the Environment Plan Bridging Document to identify and manage specific environmental issues. A fact sheet will be distributed to key stakeholders, such as the commercial fishery vessels operating within the permit/licence area, prior to commencement of the activity.

7. CONTACT DETAILS

For further information about the Wanaea-11 Subsea Installation Environment Plan Bridging Document please contact

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