VINCENT PHASE 3
SUBSEA INSTALLATION
PROGRAM
WA-28-L

SUBSEA INSTALLATION ENVIRONMENT PLAN BRIDGING DOCUMENT SUMMARY

July 2011

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WA-28-L Vincent Phase 3 Development Subsea Installation Environment Plan Bridging Document Summary

This summary of the WA-28-L Vincent Phase 3 Development Subsea Installation Environment Plan Bridging Document has been submitted to comply with Regulation 11(7)(8) of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.*

1. INTRODUCTION

Woodside Energy Ltd (Woodside) is planning to undertake subsea installation activities to support the development of the Vincent area. The subsea development scope involves the installation of three rigid spools to tie back three new wells (VNB-H5, VNB-H6 and VNB-H7) to the existing DCB manifold.

The subsea installation activities will be undertaken in a phased approach: the two spools tying in production wells VNB-H5 and VNB-H6 will be installed during the second half of 2011, and the spool to tie-in production well VNB-H7 will be installed later in 2011 or during the first half of 2012, following the drilling of VNB-H7. Each spool installation will take approximately one week to complete.

This Environment Plan Bridging Document (EPBD) bridges to the *Vincent Development – Subsea Construction and Installation Environment Plan* (referred to as Vincent Subsea Installation EP) and the *Vincent FPSO Environment Plan* (referred to as Vincent Operations EP), and covers the subsea installation activities for the Vincent Phase 3 Development. The drilling and completion activities are covered by a separate Environment Plan and approval.

2. DESCRIPTION OF ACTIVITY

The proposed Vincent Phase 3 subsea installation activities are situated in Production Licence WA-28-L, located approximately 50km north-west of the town of Exmouth; 18.5km north of the Ningaloo Marine Park (Commonwealth Waters) offshore boundary; and 26km north-west of the Muiron Islands Marine Management Area. Table 1 summarises the well details including surface coordinates, water depth, permit area and timing for the proposed infill wells subsea installation.

Table 1: Well Co-ordinates, Water Depth and Timing (GDA 94, MGA zone 51)

Well	Water Depth (mLAT)	Easting (m) (Longitude)	Northing (m) (Latitude)	Permit Area	Timing
VNB-H5	394	192 477.94	7 626 944.51	WA-28-L	2H 2011
VNB-H6	394	192 409.45	7 626 911.53	WA-28-L	2H 2011
VNB-H7	394	192 468.41	7 626 968.45	WA-28-L	2H 2011 / 1H 2012

Figure 1: Vincent Development Subsea Infrastructure Layout

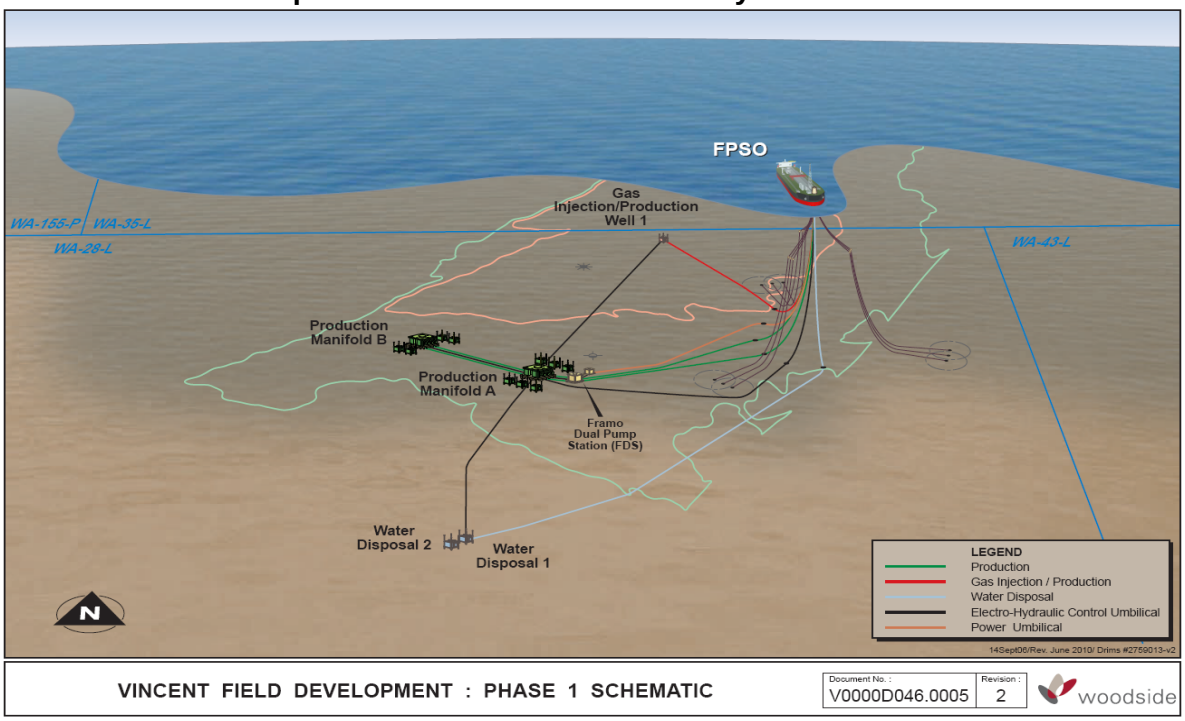
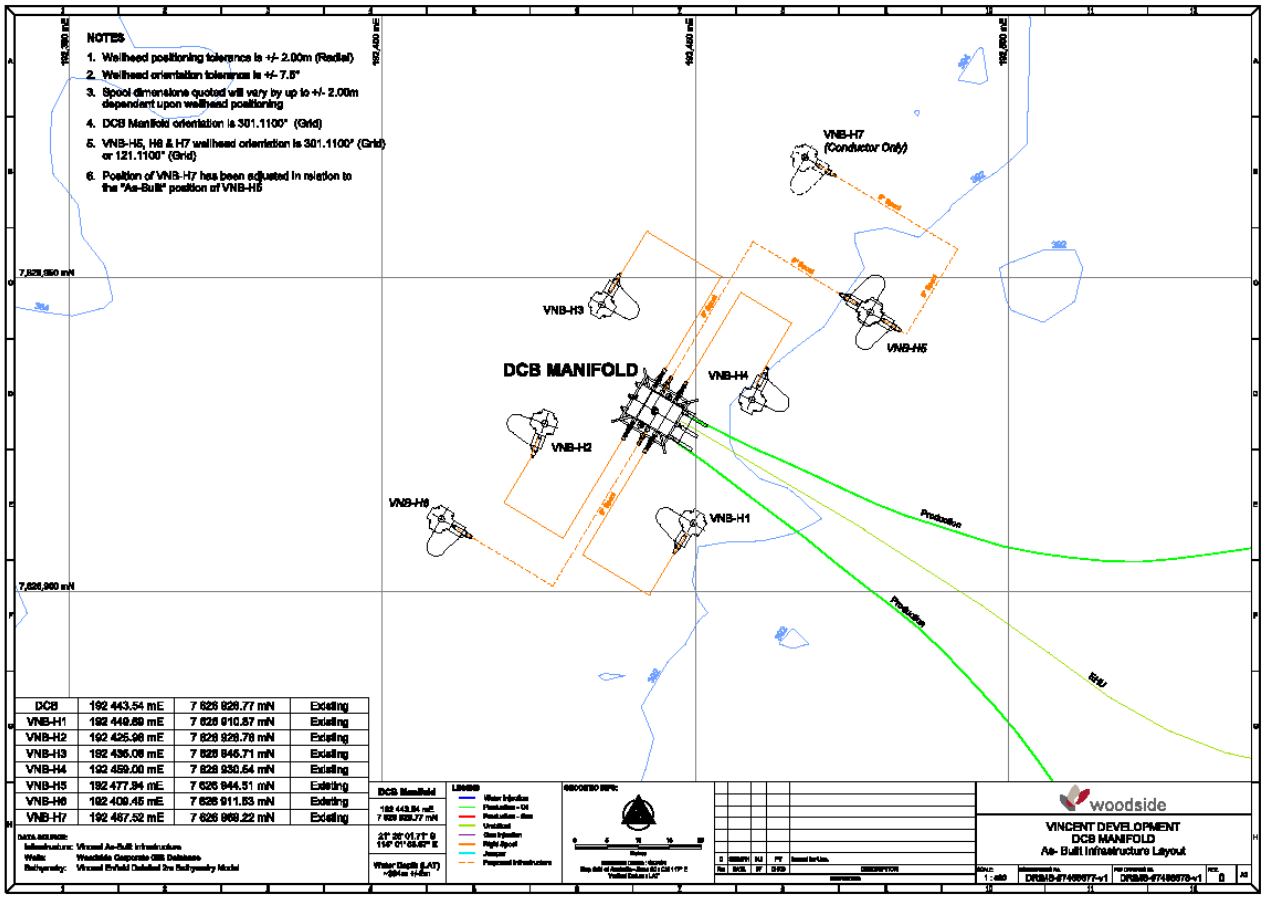


Figure 2: Vincent Phase 3 Development Spool Layout



The new production wells (VNB-H5, VNB-H6 and VNB-H7) will be tied in to the existing manifold DCB with rigid spools. The rigid production spools to tie in VNB-H6 and VNB-H7 will be 6-inch and the rigid production spool to tie in VNB-H5 will be an 8-inch. The rigid production spool design will incorporate the hydraulic control and chemical injection lines and electrical flying leads.

The scope of work includes supply and installation of three rigid production spools:

a) De-pressurisation of production system to allow safe removal of blind flanges at the connection points on manifold DCB.
b) Install rigid spool pieces. Spool pieces will be installed with guide wires.
c) Tie-in spool pieces, using ROVCON equipment.
d) Pre-commissioning and testing of spools.

Spool installation and pre-commissioning activities for VNB-H5 and VNB-H6 wells are expected to be conducted during the second half of 2011 for approximately two weeks. The spool installation and pre-commissioning activities for VNB-H7 will be undertaken either later in 2011 or during the first half of 2012, depending on rig and vessel scheduling.

The activities will be carried out in water depths around 394 metres and the tie-ins performed by ROVs carried out from an installation support vessel (ISV).

3. DESCRIPTION OF THE ENVIRONMENT

3.1 Physical and Biological Environment

The seabed in the Vincent Development area is predominantly flat and featureless, sloping gently from south-east to north-west. The benthic biota at the location are characterised by a sparse seabed community, including larger species living on the seabed (mainly urchins, seastars and crustaceans) and smaller burrowing invertebrate species living within the seabed sediments. Resources of ecological significance in the surrounding surface waters typically include mobile species mostly occurring in low numbers and widely dispersed.

The closest sensitive environmental resource from the offshore location is the Ningaloo Marine Park (Commonwealth Waters) which is located approximately 18.5km from the Development location. A variety of cetaceans (whale and dolphin species) have been recorded during surveys of offshore waters in the vicinity of the Vincent Development. This included several large whales, notably Humpback, Blue, Sperm, Minke, Pilot and False Killer Whales. Survey information indicates that Humpback Whales are the most abundant whale species recorded, present in the area between June and November. November is considered the end of the known southbound migration period for Humpback whales in the region.

3.2 Social Environment

The nearest town to the Vincent Development is Exmouth, located about 1,200 km north of Perth. Tourism is one of the major industries of the town and contributes significantly to the local economy in terms of both income and employment. Tourist activities centre on recreational fishing, boating, and nature-based tourism. This is based around Ningaloo Reef, Cape Range National Park, and seasonal attractions such as the humpback whales, whale sharks and turtle nesting.

The main commercial activities associated with Exmouth include prawn fisheries, tourism and defence-related activities. Limited commercial fishing takes place in deepwater offshore regions, the most notable being a developing longline fishery.

Other significant socio-cultural features include the Ningaloo Marine Park (Commonwealth and State Waters), Muiron Islands Marine Management Area and Cape Range National Park.

4. ENVIRONMENTAL RISK ASSESSMENTS

An environmental risk assessment was undertaken for the Vincent Phase 3 Development subsea installation activities. The risk assessment process demonstrated that identified hazards / activities associated with the proposed rigid spool subsea installations have been assessed as medium or low. There were no hazards identified above a medium risk level. Risk reduction and management actions (control and mitigation measures) implemented to ensure that the risk levels remain tolerable are identified in Section 5 of the Vincent Subsea Installation EP. The activities are also covered by the Woodside Carnarvon Basin Oil Spill Plan (ERP 3250). The proposed Vincent Phase 3 development infill wells subsea installation will not result in any additional environmental risks or changes to risks outlined in the Vincent Operations EP.

The environmental risks identified as medium for this project are related to loss of containment (fuel or chemical) during spool installation and pre-commissioning activities, disturbance to marine fauna (cetaceans) during routine installation activities, and introduction of invasive marine species via ballast water and/or vessel hulls. Risk reduction and management actions (control and mitigation measures) will be implemented to ensure that the risks remain As Low As Reasonably Practicable (ALARP).

Small volumes of pre-commissioning chemicals (MEG, oxygen scavenger, biocide, corrosion inhibitor, dye) will be used during this project. The fluids displaced during flushing of the new spools will be processed via the Vincent FPSO. Processing and management of these fluids within the production system is covered in the Vincent Operations EP. The volumes are not significant to impact on the FPSO operations and will be preferentially disposed of into the produced formation water reinjection system. However for operational reasons there may be periods where discharge overboard is required. Hydraulic control fluid from the valve actuation at manifold DCB 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 Vincent Operations EP.

Due to the short duration of subsea installation activities, it is envisaged that there will be no vessel re-fuelling taking place offshore or within Exmouth Gulf.

The presence of vessels during the Vincent Phase 3 development subsea installation during the second half of 2011 and the first half of 2012 may coincide with humpback whale migration periods. Should whales be encountered during the installation campaigns, the potential zone of impact will be 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 Contractor's Installation Support Vessel (ISV). The vessel will be mobilising from Dampier and will be operating in deep water. This risk assessment considers the recent origin of the vessel and its recent inspection, maintenance and cleaning history to determine the level of risk of infection by IMS. Based on the outcomes of the IMS risk assessment, management measures commensurate with the risk will be implemented to minimise the likelihood of IMS being introduced and establishing in Australian waters. A range of management options are available. 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 performance objectives and commitments to be applied during the Vincent Phase 3 Development subsea installation program are summarised in Table 2 below.

Table 2: Performance Objectives and Commitments for the Vincent Phase 3 Development Subsea Installation

Objective	Commitment
1. Project personnel understand and comply with the scope, objectives and commitments contained in the EPBD.	• All relevant Woodside and contractor personnel receive an induction that outlines the approved activity scope, environmental sensitivities, management procedures and standards and commitments detailed in this EPBD.
2. Minimise disturbance to the seabed and benthic habitats	• Pre-installation survey undertaken to assess the presence of sensitive features in the immediate area. • Seabed disturbance is as described in the EPBD. • No anchoring of vessel at Project Location. • Detailed records of equipment lost overboard will be maintained.
3. Minimise disruption to transient marine fauna	• Adherence to the SEWPC Whale Interaction / Watching Guidelines 2005 as far as it is applicable to the project scope of work. • All relevant Woodside and contractor personnel receive an induction that includes cetacean interaction guidelines and reporting of sightings. • Detailed reports of all cetacean sightings will be recorded on the SEWPC Whale and Dolphin Sighting Report Forms.
4. No introduction of invasive marine species	• Adherence to the *AQIS Australian Ballast Water Management Requirements* and quarantine requirements. • IMS risk assessment completed and management process implemented. Follow-up actions taken if required.
5. Minimise impact of chemically treated water discharges on the marine environment	• Compliance with Project pre-commissioning procedures, including selection of chemicals of low toxicity.
6. Minimise impact from storage, handling and disposal of wastes	• Vessels to comply with MARPOL 73/78 (as implemented in Commonwealth waters by the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*). • Vessel Waste Management Plan in place to record quantities of waste

	transported to shore. • All solid, liquid and hazardous wastes (other than sewage, grey water and putrescible wastes) will be incinerated or compacted (if possible) and stored in designated areas and sent ashore for recycling, disposal or treatment. • All chemical and hazardous wastes will be segregated into clearly marked containers prior to onshore disposal. • All storage facilities and handling equipment will be in good working order and designed in such a way as to prevent and contain any spillage as far as practicable. • Inductions will provide details on waste management requirements for all waste streams.
7. No significant impact on marine environment from discharge of operational discharges e.g. sewage and putrescible wastes	• All sewage and putrescible wastes will be managed and disposed of in accordance with MARPOL Annex IV (as implemented in Commonwealth waters by the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*). • All sewage and putrescible waste treatment systems and holding tanks are to be fully operational prior to commencement. • A Vessel Waste Log will be maintained to record waste management practices. • Inductions will provide details on waste management requirements for waste streams.
8. No accidental hydrocarbon or chemical spills to the marine environment	• Hydrocarbons and chemicals located above deck will be stored with some form of secondary containment to contain leaks or spills e.g. bund, containment pallet, transport packs etc. • A shipboard Oil Pollution Emergency Plan (SOPEP) and oil spill recovery equipment will be in place in accordance with requirements of MARPOL. • Deck drainage contaminated with hydrocarbons or chemicals to be contained and can only be discharged if monitored and oil in water to be below 15mg/L. If not it must be disposed of onshore. • Bilge water will be treated and disposed in accordance with MARPOL 73/78 (as implemented in Commonwealth waters by the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983).* • Bilge water contaminated with hydrocarbons must be contained and disposed of onshore, except if the oil content of the effluent without dilution does not exceed 15mg/L. • Vessel effluents contaminated with chemicals must be contained and disposed of onshore, except if the chemical is demonstrated to have a low toxicity. • Inductions will provide details on waste management requirements for waste streams. • Vessel bunkering procedures will be complied with.
9. Minimise interference with commercial and recreational vessels and shipping activities	• Adherence to standard maritime safety and navigation procedures (e.g. Auscoast Warnings via AMSA where appropriate, radio contact, display of appropriate navigational beacons and lights). • Notification of activity details to relevant commercial fisheries organisations prior to commencement of each installation campaign.
10. All environmental incidents are reported in accordance with the requirements of this EPBD, WEL procedures and legislative requirements.	• All relevant project personnel undertake an HSE induction that includes an overview of the incident reporting and notification procedures detailed in this EPBD. • Report all incidents in line with WEL Operating Standard – "Event Reporting & Investigation" and WEL Corporate Event Notification Matrix. • All reportable incidents to be provided to the DA within the specified timeframes.

6. CONSULTATION

Woodside recognises stakeholder interest in the broader region, which is recognised for its high conservation values, as well as local stakeholder interest in the use by industry of Exmouth Gulf. Woodside is undertaking an ongoing consultation program commensurate with the activities associated with the Vincent Development.

A Community Reference Group (CRG) has been in place since 2002. CRG meetings are conducted on a regular basis in Exmouth and also serve to provide updates on Woodside's proposed activities within the Exmouth Sub-Basin.

A fact sheet / electronic notification will be distributed to a broader stakeholder group prior to commencement of the Vincent Phase 3 development subsea installation. The fact sheet / notification will include a location map, summarise the activity scope and approximate duration, vessels involved and contact details.

7. CONTACT DETAILS

For further information about the Vincent Phase 3 Development Subsea Installation Environment Plan Bridging Document please contact:

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8. ACRONYMS AND ABBREVIATIONS

ALARP	As Low As Reasonable Practicable
AMSA	Australian Maritime Safety Authority
AQIS	Australian Quarantine Inspection Service
CRG	Community Reference Group
DA	Designated Authority
EP	Environment Plan
EPBC	*Environment Protection and Biodiversity Conservation Act 1999*
EPBD	Environment Plan Bridging Document
ERP	Emergency Response Plan
FPSO	Floating Production, Storage and Offloading
IMS	Invasive Marine Species
ISV	Installation Support Vessel
MARPOL	International Convention for the Prevention of Pollution from Ships
MEG	Mono Ethylene Glycol
OPGGSA	*Offshore Petroleum and Greenhouse Gas Storage Act 2006*
OSCP	Oil Spill Contingency Plan
ROV	Remote Operated Vehicle
SEWPC	Sustainability, Environment, Water, Population and Communities (Dept of)
SOPEP	Shipboard Oil Pollution Emergency Plans
WA DMP	Western Australia Department of Mines and Petroleum
WEL	Woodside Energy Ltd