PERSEUS OVER GOODWYN PIPELAY ENVIRONMENT PLAN SUMMARY

The Environment Plan (EP) covers the installation of a 24.1 km long 16-inch gas pipeline and two (1.8 km and 1.4 km long) 10-inch gas pipelines as part of the Woodside Perseus over Goodwyn Project. Allseas Construction Contractors S.A. have been awarded the contract by Woodside Energy Ltd., which involves installation and testing of the pipelines. It is anticipated that this work will commence in August 2006 and end in November 2006.

The EP addresses the processes for mitigation and monitoring (as necessary) environmental hazards and risks during offshore construction activities that could lead to impact on the environment from the Perseus over Goodwyn (PoG) project. This EP covers three vessels performing offshore construction activities namely: Dynamicaly Positioned Pipelay Vessel *Lorelay*, Support Vessel *Highland Rover* and a Pipe Supply Vessel.

Location of the Activity

The PoG field is located approximately 65 nautical miles off the Dampier coast. The water depths at the field locations vary slightly around 130m. The GWA Platform lies at 19 deg 39 min 13 sec South, 115 deg 55 min 42 sec East (AGD) in about 130m of water, within Production License WA-5-L, about 130 km north west of the on-shore gas processing plant on the Burrup.

Consultation

Woodside has developed an environment communication strategy and a plan is in place to consult with relevant stakeholders, primarily DEH, DoIR and WAFIC. An EPBC referral was submitted to DEH and deemed to be a non controlled action. Environment Plans for drilling, pipelay and subsea installation activities will be approved by DoIR before the commencement of work in the field and WAFIC are kept informed of upcoming project activity.

Environmental Management

The pipelay construction follows the Allseas Corporate Management System, which is certified as being compliant with ISO-14001:1996 Environmental Management System. A systematic approach is taken to the management of hazards and risk through the identification and assessment of hazards and risk, the establishment of objectives, plans and performance standards, and the development of adequate documentation.

Biological Environment

The proposed activities will not impact upon any World Heritage properties, Ramsar wetlands, threatened ecological species or communities or Commonwealth land. There are no areas listed on the Register of the National Estate within the vicinity of GWA. There are no known sites of Aboriginal or European cultural or heritage significance within the project area. No record of any declared shipwrecks exists within the acreage. There are no reef structures or landfalls typically associated with high marine productivity, bird or turtle nesting

sites or other known areas of biological significance in the vicinity of the GWA platform or proposed project area.

The seabed in the vicinity of the GWA and NRA platforms is well surveyed and considered typical of the deeper offshore areas on the NWS, being flat, featureless and characterised by deep fine to medium-size carbonate sand.

Species Listed under the EPBC Act: Listed and threatened species, including migratory species may transit through the project area.

Socio-Economic Environment

The GWA and NRA platforms are offshore and are subject to an exclusion zone that precludes any activity other than that associated with the platform operations within 500 meters of the facilities. Woodside has undertaken consultation with WAFIC to inform the relevant fisheries of the activities near the GWA platform and Perseus field.

The PoG Development will not affect the current shipping routes other than the temporary increase in frequency of support and construction vessels during construction.

Environmental Aspects

Table below summarises the key environmental aspects of the pipelay construction related activities that may lead to these aspects being adversely affected.

Aspect	Performance Criteria	Recordable Incident
Management Activities		
Allseas maintains and operates an HSE-MS that is compliant with ISO 14001.	• Allseas to maintain ISO-14001 Certification • Vessel ISM Code Certification • Pre-construction induction of Allseas personnel has been carried out	• Allseas ISO-14001 Certification not Maintained • Vessel ISM Code Certification not Maintained • Audit reveals lack of awareness and existence and location of Environmental Policies
Routine Offshore Activities		
Physical presence of pipelay and support vessels	• Allseas will include awareness of protected species issues and relevant site-specific management practices into project and operation training, inductions and specific programs • Allseas will apply the Environment Australia Cetacean [whales and dolphins] Interaction Guidelines to activities with potential for cetacean interaction. Sightings will be recorded on EA's whale and dolphin sighting report sheets and forwarded to EA's Marine Species Section	• Cetacean sighting not reported.
Physical disturbance of seabed communities	Avoidance Measures: • Prior to installation of the subsea pipeline, existing side scan sonar and refractive seismic data of the pipeline route will be reviewed to identify any obstructions along the route and confirm water depths. • PLMV Lorelay is Dynamically Positioned and no anchoring by support vessels during offshore campaign Treatment Measures: • Short duration of disturbance from piling and freespan correction. • After pipeline installation, Allseas will perform video surveillance through the use of an underwater remotely operated vehicle.	• ROV survey identifies disturbance of sensitive seabed communities

Aspect	Performance Criteria	Recordable Incident
Management Activities		
Dropped objects that could cause an impact	Avoidance Measures: • AMSA Notice to mariners • Safety zone around PLMV Lorelay • Navigation lights will be in place • Standard marine communications systems Mitigation Measures: • Minimise time on location • Establish restricted navigation area and other measures in consultation with AMSA	• Dropped object overboard
The introduction of artificial light to the environment	Mitigation Measures: • Lighting on DPPLV Lorelay and support vessels will be restricted to minimum necessary for safe working practices • Significant distance offshore	• Light related incidents or complaints
The introduction of noise to the environment	Avoidance Measures: • Allseas equipment will comply with normal industry standards, including specifications for noise • Helicopters to maintain distance of at least 1,000 m from any observed whales Mitigation Measures: • Equipment designed to normal oilfield standards including specifications for noise levels	• Noise related incidents or complaints • Helicopter is flown within 1000m of an observed cetacean.
The introduction of air emissions to the environment.	Mitigation Measures: • Emissions are in accordance with standards and guidelines. • Allseas will provide WEL with details of fuel consumption and Ozone Depleting Substances (ODS) use.	• Vessel equipment maintenance non-conformance • Incinerator use for non oily wastes • Use of Halon systems in case of engine room fire • Refrigerant handling by non certified technician
General non-hazardous wastes will be produced during offshore construction	Avoidance Measures: • Limit waste creation through tendering and contracting process • Source, nature and quantities of all solid wastes likely to be generated have been identified • Methods to collect, reuse, treat or dispose of each solid waste stream have been identified • Waste Management Plan in place Mitigation Measures: • Segregation of all waste at site, onshore disposal, recycling where practicable • Waste management is in accordance with Allseas procedures • Personnel have been trained in Waste Management procedures	• Waste management non-conformance as per EP and project procedures [HOLD].

Aspect	Performance Criteria	Recordable Incident
Management Activities		
General hazardous wastes will be produced during offshore construction	Avoidance Measures: • Allseas will favour chemicals with the lowest HSE risks, subject to cost considerations • Allseas will make available MSDS sheets and COSHH assessments on all chemicals selected • Safety Instruction (SI)15.1 Control of Substances Hazardous to Health • Waste Management Plans in place • Containers clearly marked, stored in secure areas designed to prevent and contain spills • Allseas operating procedures for waste management (EI-15.1 Waste Management) Mitigation Measures: • Hazardous waste segregated offshore for onshore recycling or disposal to approved facility • Hazardous waste management is in accordance with Allseas procedures • Personnel have been trained in Waste Management procedures; • Chemicals are stored within a nominated, fully bunded and sealed area in appropriate containers/vessels Treatment Measures: • Records to track hazardous wastes until final disposal	• COSHH and Waste management non-conformance as per EP and project procedures [HOLD].
Introduction of exotic species from imported goods and materials	Avoidance Measures: • Application of ISPM 15 International Standards for Phytosanitary for imported goods	• AQIS / ISPM 15 non-conformance • Logistics procedure non-conformance [HOLD]
Release of deck drainage to ocean	Avoidance Measures. • No wastes will be routinely discharged via deck washdown • Process and utility equipment integrity to restrict leakages and small spills • Operating and maintenance procedures to restrict leakages and small spills • Design of DPPLV Lorelay to segregate hazardous and non-hazardous areas for drainage collection and to restrict contamination of clean run-off Mitigation Measures: • Small deck spills contained and cleaned up • Treatment Measures: • Discharge of deck drainage water will meet all relevant legislative requirements, rain falling on clean deck areas will be discharged directly overboard, as will deck washdown • Quick response to repair leaks and clean up spills to deck	• All spills • Spills > 80L are reportable[1]
Discharge of ballast water to ocean	Avoidance Measures: • Implement AQIS and IMO regulations for ballast water management. • Mitigation Measures: • Ballast discharge procedures • Ballast water tanks are segregated from the fuel tanks	• AQIS/IMO non-conformance • Ballast procedure non-conformance
Treated sewage and greywater effluent discharged to ocean	Avoidance Measures: • Sewage treatment plant meeting MARPOL 73/78 requirements • Logbooks and certificates demonstrating equipment is in good operating condition to be sighted prior to mobilisation. Mitigation and Treatment Measures: • As a minimum all sewage and greywater discharge will meet MARPOL 73/78 requirements	• Discharge of sewage within port limits

Aspect	Performance Criteria	Recordable Incident
Management Activities		
Discharge of treated hydrotest water to ocean[2)]	Mitigation and Treatment Measures: • Chemicals used in hydrotest water will be selected with preference for the least environmental harm while meeting technical requirements. A disposal plan will be developed and implemented. • Allseas will monitor the volume and concentration of all inhibitor chemicals injected into the pipeline system to ensure such conforms to the accepted dosage.	• Discharge amount not approved within EP • Chemicals used not approved in EP
The introduction of biocides used in antifouling paints to the environment	Avoidance Measures: • Preference for vessels that do not have TBT antifouling where practicable.	• Non TBT free vessel hulls
Non-routine Offshore Activities		
Accidental Release of Oil or Chemicals	Avoidance Measures: • Allseas will conduct environmental risk assessments for all streams of significant environmental risk. • DPPLV Lorelay integrity and ongoing maintenance • Fuel transfer hose integrity management • Bunding and spill response equipment on board to contain all small deck spills on board • Approved refuelling procedures are in place and followed for PLMV Lorelay and support vessels • Collision avoidance e.g. navigation lighting, anti-collision radar Mitigation Measures: • Operational procedures • Personnel training and competency assessment • Dry break coupling (on fuel transfer hose). Treatment Measures: • Approved Oil Spill Contingency Plan (SOPEP) and other Emergency Response Plans in place for responding to any spill event • Allseas vessels will have valid SOPEP and a Project Emergency Bridging Document will be prepared • Allseas Environmental Instructions (EI) • SOPEP and associated periodic response exercises	• All Spills • SOPEP / Spill response equipment non-conformance • Bunkering/refuelling procedure non-conformance • Spills > 80L are reportable[1]

1. Reportable as defined in P(SL)(MoE)Reg 1999.
2. Only applicable to *Highland Rover* as pre-commissioning will take place from this support vessel.

Objectives and performance standards for environmental management have been established based on consideration of Allseas and Woodside HSE management standards, legal requirements and technology options and feasibility.

Appendix II of the EP provides a summary of the Environmental Objectives, Standards and Performance Criteria. All staff and contractors taking part in the PoG Project will be advised of their responsibilities prior to commencement of activities. This will occur through meetings with key contractor personnel and an induction and awareness presentation that will be given to all crew.

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