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**PETROLEUM**  
**AUSTRALIA PRODUCTION UNIT**  
  
**PYRENEES DEVELOPMENT**  
**STICKLE 8H4 TIE-IN & RAVENSWORTH 8H6 INTERVENTION**  
  
**ENVIRONMENT PLAN BRIDGING DOCUMENT SUMMARY**  
**DRILLING AND SUBSEA INSTALLATION**

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Revision	Date	Description	Author	Checker	Drilling	Pyrenees Field Manager	Project Advisor
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# 1 PROJECT DESCRIPTION

BHP Billiton Petroleum (BHP Billiton) propose to develop and tie back an additional subsea production well (Stickle 8H4) to the existing Pyrenees facility (Pyrenees Development). This project is called 'Stickle 8H4'. Table 1 summarises the details of this project. An additional component of this project is the replacement of the gas lift valve located in the Ravensworth 8H6 well to rectify performance issues.

The current Pyrenees Development consists of thirteen production wells, one gas injection well and three water injection wells. These wells are connected to a Floating Production Storage and Offloading (FPSO) facility, which has a design life of 25 years. The Pyrenees FPSO is a double hulled tanker and it is equipped with a disconnectable mooring and its own propulsion system, which will allow evasion of cyclones. The topside processing facilities consist of oil/water/gas separation systems, water injection, and gas compression equipment.

The Pyrenees Development was referred to the Department of the Environment and Heritage under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and was determined to be a controlled action. The Environmental Impact Statement (EIS) was released in 2005 and approval, subject to conditions, was granted on 26<sup>th</sup> April 2006 (2005/2034). Future subsea tie-ins were described in the original Pyrenees Development EIS.

Stickle 8H4 represents an incremental increase of one production well to the existing Pyrenees Development. The new Stickle 8H4 subsea well will be drilled using Atwood Eagle MODU in approximately 220 metres followed by a tie back to the Pyrenees FPSO. A single installation support vessel (ISV) will be utilised to install the production and gas lift jumpers and hydraulic and electrical flying leads. This is expected to be conducted between January 2012 and April 2012 once drilling is completed.

All incremental development will remain within the notional development area, as identified in the Pyrenees Development EIS.

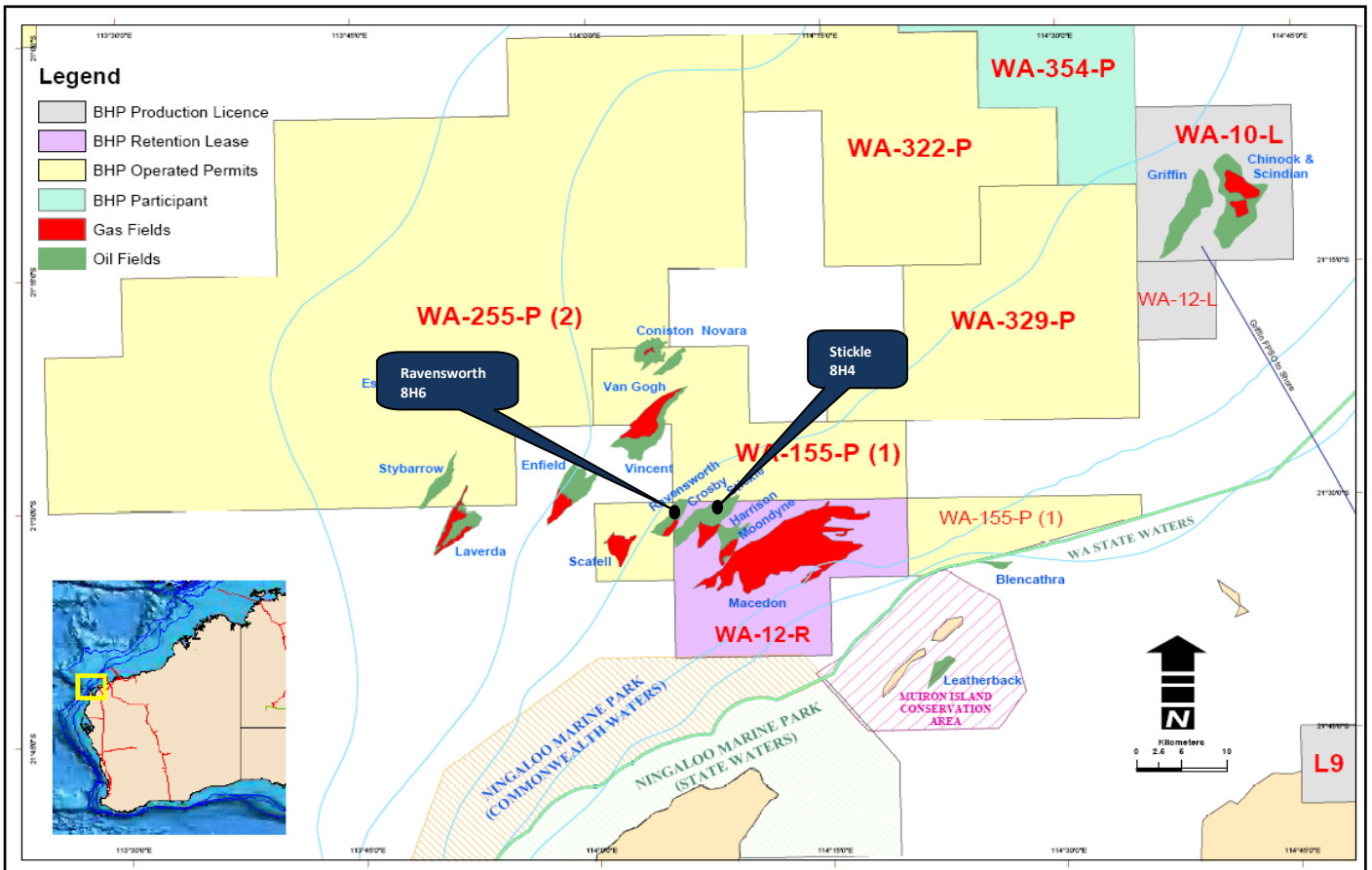
The Ravensworth 8H6 intervention is also proposed to replace the downhole gas lift valve that is partially blocked and has lead to decreased well performance. The Atwood Eagle MODU will be anchored at the well location (198062 easting 76164286 northing) and a subsea riser, BOP and well control system will be installed on top of the existing subsea tree. The duration of intervention is estimated to be 7 days and will be conducted in the November 2011 to January 2012 period.

Table 1 Project Summary

WELL NAME	STICKLE 8H4 (DRILLING AND INSTALLATION)		RAVENSWORTH 8H6 (INTERVENTION)
Approximate surface location (GRS80, GDA94)	Latitude	21° 31' 24.037" South	198028 Easting
	Longitude	114° 06' 37.293" East	76164286 Northing
Permit area	WA-42-L (previously WA-12-R)		
Water depth	~ 200 m		
Drilling rig	Atwood Eagle		
Expected Drilling Timeline	November 2011 to January 2012 (Drilling duration 37 Days but weather, progress and downtime dependent)		November 2011 to January 2012 (Rav 8H6 intervention 7 days)
Expected Installation Timeline	January 2012 to April 2012 (Installation duration-7 days)		N/A
Environment Plan	Pyrenees Development Project Environment Plan BHPB-00PY-N950-0007 (Rev 2 Sept 2008) accepted by DMP October 2008 / SEWPac September 2008		

## 2 LOCATION

The Pyrenees Development Area off NW Cape lies within Commonwealth waters. The proposed Stickle 8H4 surface location is approximately 10 km from the northern boundary of the Commonwealth waters of the Ningaloo Marine Park. The nearest land (North West Cape) lies approximately 23 km from the Pyrenees Development Area, and the Muiron Islands are approximately 25 km from the FPSO “Pyrenees Venture” location (see Figure 1).



**FIGURE 1: STICKLE 8H4 INFILL WELL AND RAVENSWORTH INTERVENTION WELL WITHIN THE PYRENEES DEVELOPMENT AREA AND REGIONAL ENVIRONMENTAL FEATURES**

### 3 REGIONAL ENVIRONMENT

The Pyrenees Development Area off NW Cape lies within Commonwealth waters. A range of habitat types, including extensive coral reefs, mangroves and sandy, muddy and rocky intertidal areas, are associated with mainland and island coasts.

The bathymetry of the region is characterised by shallow water depths on the continental shelf, rapidly increasing water depths on the continental slope, gradually lowering into deep sub-sea basins with distance offshore. The Pyrenees Development Area is located on the shelf break, the transition from continental shelf to slope, with water depths sloping seaward from 190 m at the shelf edge, to depths of 260 m.

The North West Cape area occurs in a zone of overlap between tropical and temperate regions, though the majority of species in the region are tropical, with increasing representation of temperate species in the south. The Pyrenees Environmental Impact Statement included a full description of the physical, social and biological environment around the Pyrenees Development Area off NW Cape.

The main centre of biodiversity in the region is the Ningaloo Reef, which extends southwards from North West Cape for approximately 260km and is known to support a highly diverse and abundant marine community. The Exmouth Gulf supports extensive mangrove communities, particularly on its eastern shore.

Whales and dolphins are commonly observed in the region, especially in Exmouth Gulf. Humpback whales (*Megaptera novaeangliae*) migrate seasonally through the region in relatively high numbers, while other whale species including pygmy blue whales (*Balaenoptera musculus brevicauda*), minke whales (*Balaenoptera acutorostrata*) and short-finned pilot whales (*Globicephala macrorhynchus*) are thought to be present throughout the year in low numbers, or to transit occasionally through the region. Based on the proportion of pods observed migrating in each direction, the annual humpback whale migration of the Group IV population was found to consist of three distinct phases, these being:

- Northern migration (early June to early August); most pods heading north
- Transition period (early August to early September); some pods still heading north, some returning south
- Southern migration (early September to late November); most pods returning south.

Approximately 1,400 species of finfish are known to occur in the region, mostly of a tropical Indo-West Pacific affinity, with the greater proportion occurring in shallow coastal waters.

Whale shark aggregations off Ningaloo Reef generally occur between April and June and encounters mainly take place within a few kilometres of the reef.

A broad variety of seabirds are known to occur in the region with many also breeding in the region. One of the most common species is the wedge-tailed shearwater which breeds mainly on offshore islands (including the Muiron Islands and Serrurier Island) from October to May. Other species may also travel some distance from shore to forage for food, though the distribution of seabirds in deeper offshore waters in the region tends to be very patchy except near islands.

There are five species of marine turtle known to occur in the region (Flatback, Green, Hawksbill, Leatherback and, Loggerhead). Green and loggerhead turtles are known to breed on sandy beaches along the coastline and offshore islands in the region. However, limited numbers of turtles, likely to be loggerheads, are observed in the deeper offshore waters in the vicinity of Stybarrow North.

The nearest town to the proposed development is Exmouth. The Shire of Exmouth has a resident population of approximately 3,000 people, though there are large short-term fluctuations in population due to the high number of tourists that visit the area. The main commercial activities associated with Exmouth include prawn fisheries, tourism and defence-related activities. Other significant socio-cultural features include the Ningaloo Marine Park (Commonwealth and State Waters), the Muiron Island Marine Management Area and Cape Range National Park.

The results of high-resolution geophysical surveys, video surveys and seabed sampling indicate that the seafloor at the well locations is predominantly featureless and consists of soft fine sediments (clay/silts). About 95 different species were recorded, including several that were new to Australia and possibly several new species. Limited patches of outcropping rock can be found at a range of depths, although mainly along scarp and canyon features in water depths greater than 500m. This hard substrate supports a locally diverse accumulation of species. While some unusual species were recorded, the same general collection of species is widespread and well represented along the continental shelf and upper slope in this region.

## 4 CONSULTATION

BHPB has consulted with the Exmouth Community over a number of years, as BHPB has been active in the region for some time. In 2003 the Exmouth Sub-basin Community Reference Group (CRG) was established with consultation predominantly centred around BHPB's projects in the region, however has also included other activities such as drilling and seismic surveys. The consultation programme has included:

- Face-to-face briefings and discussions;
- Periodic written newsletter updates posted to stakeholders;
- A 1800 toll-free telephone number;
- Community Reference Groups (CRGs) established in Exmouth and Perth; and
- Advertising of public comment opportunities in newspapers for activities undergoing EPBC Act processes.

Ongoing consultation activities will include:

- Continued use of CRGs established in Exmouth and Perth; and
- A 1800 toll-free telephone number.

Details of the Stickle 8H4 tie back were presented at the CRG meeting held in Exmouth on the 10<sup>th</sup> August 2011.

## 5 CONTACT DETAILS

Further information may be obtained from BHP Billiton External Affairs on 1800 110 258 or in writing to

External Affairs  
BHP Billiton Petroleum Pty Ltd  
PO Box J668  
Perth WA 6842

## 6 ENVIRONMENTAL MANAGEMENT

The BHP Billiton Charter, Sustainable Development Policy, and Climate Change Position and HSEC Management Standards are mandatory to all BHP Billiton sites and operations. The BHP Billiton HSEC Management Standards form the basis for the development and application of HSEC-MS at all company operations. They are consistent with ISO 14000 series Environmental Management Systems (EMS) and are publicly available from the BHP Billiton website.

BHP Billiton Group Level Documents (GLDs) are a series of documents intended to provide BHP Billiton businesses with guidance on the effective implementation of the HSEC Management Standards at the operational level. The Pyrenees Operations have a HSEC Management System Manual in place, compliant with the ISO 14001 EMS and OHSAS 18001 Safety Management System Standard.

A systematic approach is taken to the management of hazards and risk through the identification and assessment of hazards and risk, the identification of mitigation and control measures, the establishment of objectives, plans and performance standards, and the development of specific documentation.

Table 4 summarises the key environmental aspects and the activities.

**Table 4: Environmental Aspects and Project Activity Interactions**

Activity	Aspect										
	Physical Presence	Light	Noise	Sediment impacts	Water quality	Nutrient addition	Marine discharges	Solid Waste Disposal	Greenhouse gas emissions	Hydrocarbon Contamination	Biodiversity
<b>Routine Events</b>											
Mobilisation to site	✓	✓						✓			
Vessel anchoring (MODU, ISV etc)	✓	✓	✓	✓							
Drilling		✓	✓								✓
Drill Cuttings Discharge	✓			✓	✓						
Drill Mud Discharge / disposal											✓
Completions	✓	✓	✓								
Power generation			✓						✓		
Hydrotest dewatering - See Ops EP					✓		✓				
Flowline dewatering – See Ops EP					✓		✓				
MODU, ISV Demobilisation	✓	✓	✓					✓			
Supply vessel and helicopter operations	✓	✓	✓					✓			
Sewage and greywater						✓					
Discharge of foodscraps						✓					
Deck drainage					✓					✓	
<b>Accidental Events</b>											
Hydrocarbon Spill				✓			✓	✓		✓	✓
Chemical Spill							✓	✓		✓	
Introduced species											✓

Objectives and performance standards for environmental management have been established based on consideration of:

- BHP Billiton’s Sustainable Development Policy requirements;
- BHP Billiton’s HSEC Management Standards;
- Legal requirements;
- Community comments received during consultation; and
- Technology options and feasibility

Table 5 provides a summary of environmental objectives, standards and performance criteria. All staff and contractors taking part in the Stickle 8H4 offshore drilling, installation and Ravensworth 8H6 intervention project will be advised of their responsibilities prior to commencement of activities.



**Table 5: Summary of Environmental Objectives and Performance Criteria**

Aspect	Objective	MODU	ISV	Support	Performance Criteria
<p><b>Accidental Release of Oil or Chemicals</b></p>	<ul style="list-style-type: none"> <li>• No spill of oil or chemicals</li> <li>• No significant adverse effect on water quality</li> <li>• No adverse effects on marine biota</li> </ul>	<p>•</p>	<p>•</p>	<p>•</p>	<p><b>Control Measures:</b></p> <ul style="list-style-type: none"> <li>• Industry standard drilling practices and equipment, (including blowout preventers)</li> <li>• Industry standard sub-sea equipment such as well-heads and flowlines</li> <li>• SIMOPS management plan</li> <li>• Manual detection - visual observations</li> <li>• Hydrocarbon monitoring in the ballast tanks</li> <li>• Level monitoring in tanks</li> <li>• Industry standard shutdown systems</li> <li>• Cyclone monitoring and related procedures and disconnection in advance of cyclones or above nominated sea-state conditions.</li> <li>• Operational procedures to avoid potential for spills</li> <li>• Dry break couplings on bulk transfer hoses</li> <li>• Bunding and spill response equipment on board to contain small deck spills on board</li> <li>• Personnel training and competency assessment</li> <li>• No fuel bunkering shall commence after dark</li> <li>• No fuel bunkering shall occur in Exmouth Gulf</li> <li>• Risk assessment and hazard identification studies completed prior to mobilisation to identify potential sources of spills</li> <li>• All hazardous chemicals &amp; fuel storage areas will be bunded / contained</li> <li>• Containment audit to be completed upon commencement of rig contract</li> </ul> <p><b>Mitigation Measures:</b></p> <ul style="list-style-type: none"> <li>• Approved Oil Spill Contingency Plan and other Emergency Response Plans in place for responding to any spill events</li> <li>• Oil spill response training</li> <li>• The Project OSCP shall be tested before the start of subsea project activities. In addition, adequate allowances shall be in place for the training of staff in oil spill response measures</li> <li>• Stocks of spill response equipment including dispersants on-site and in Exmouth and Dampier</li> <li>• Pre-agreement for dispersant application procedures will be sought from AMSA, DMP and other relevant agencies such that rapid response is possible</li> <li>• MODU SOPEP and equipment</li> <li>• Rehabilitate any potential effects in event of oil spill occurring in consultation with relevant regulatory authorities</li> </ul>
<p><b>Physical Presence</b></p>	<ul style="list-style-type: none"> <li>• No significant impact to seabed habitat</li> <li>• No significant impact to seabed biological communities</li> <li>• Minimise adverse effects to marine biota</li> </ul>	<p>•</p>	<p>•</p>	<p>•</p>	<p><b>Control Measures:</b></p> <ul style="list-style-type: none"> <li>• Final mooring pattern has been reviewed to ensure that anchoring impacts will not affect sensitive habitats</li> <li>• ISV will be dynamically positioned, avoiding use of anchors Pyrenees project location is offshore in deep water, away from areas commonly used by fishing or</li> </ul>



Aspect	Objective	MODU	ISV	Support	Performance Criteria
	<ul style="list-style-type: none"> <li>No significant impact on fishing or shipping activities in the region</li> <li>No collisions or near misses</li> </ul>				recreational vessels <ul style="list-style-type: none"> <li>Activities will not commence unless accepted Safety Management Plans are in place</li> <li>Navigation lights will be in place</li> <li>Standard marine communications systems will be in place</li> <li>500m safety exclusion zone requested</li> <li>Seabed habitat type has been reviewed and no sensitive habit or rock outcrops will be affected</li> <li>Minimum impact anchoring procedures implemented</li> <li>Information on MODU and ISV locations and activities forwarded to AMSA for inclusion into Marine Notices</li> <li>Vessel-Whale interaction procedures will be implemented to avoid interference with whales</li> </ul> <b>Mitigation Measures:</b> <ul style="list-style-type: none"> <li>Flowlines and umbilicals will be laid directly onto seabed, rather than trenched</li> </ul>
Light	<ul style="list-style-type: none"> <li>No significant adverse effect on marine biota</li> <li>No significant impact on visual amenity for coastal communities or island visitors</li> </ul>	●	●	●	<b>Control Measures:</b> <ul style="list-style-type: none"> <li>Lighting on construction vessels will be at levels required for safe working practices</li> <li>Pyrenees location is significant distance offshore from turtle and seabird nesting areas</li> <li>Lighting on MODU, ISV, FPSO and OSV will be at levels required for safe working practices</li> <li>Equipment designed to normal oilfield practice, which includes specifications for safe levels of lighting</li> <li>Activities will not commence unless accepted Safety Management Plans are in place</li> </ul>
Noise	<ul style="list-style-type: none"> <li>No significant adverse effect on marine biota</li> <li>No significant impact on coastal or island communities</li> </ul>	●	●	●	<b>Control Measures:</b> <ul style="list-style-type: none"> <li>Helicopter flights will be routed to avoid flying over identified sensitive seabird nesting areas at Muiron Islands and Exmouth township except if required during emergencies</li> <li>Helicopter flights will be carried out during daylight hours only, except if required during emergencies or for training purposes</li> <li>Vessel-cetacean interaction procedures to be implemented to avoid interference with cetacean and whale sharks</li> <li>Helicopters to maintain height of at least 1,650 feet or a horizontal radius of 500 metres from any observed whales (except for landing and takeoff from MODUs, ISV or FPSO)</li> <li>EPBC Regulations 200 Part 8 Vessel-Whale interaction procedures to be implemented to avoid interference with whales (see Appendix C)</li> <li>Activities will not commence unless accepted Safety Management Plans are in place</li> </ul> <b>Mitigation Measures:</b> <ul style="list-style-type: none"> <li>Equipment designed to normal oilfield standards including specifications for</li> </ul>

Aspect	Objective	MODU	ISV	Support	Performance Criteria
					<p>noise levels.</p> <ul style="list-style-type: none"> <li>Standard installation activities will be used</li> </ul>
<b>Seabed Disturbance: Sediment Quality</b>	<ul style="list-style-type: none"> <li>No significant alteration of sediment characteristics</li> <li>No significant impact to seabed biological communities</li> <li>No adverse effect on marine biota</li> </ul>	●	●		<p><b>Control Measures:</b></p> <ul style="list-style-type: none"> <li>Final mooring pattern has been reviewed to ensure that anchoring impacts will not affect sensitive habitats</li> <li>ISV will be dynamically positioned, avoiding use of anchors</li> </ul> <p><b>Mitigation Measures:</b></p> <ul style="list-style-type: none"> <li>Flowlines and umbilicals will be laid directly onto seabed, rather than trenched</li> <li>Content of SBM on drill cuttings discharged will be reduced to &lt;10% by weight</li> <li>Minimum impact anchoring procedures implemented</li> </ul>
<b>Seabed Disturbance: Footprint</b>	<ul style="list-style-type: none"> <li>No significant impact to seabed habitat</li> <li>No significant impact to seabed biological communities</li> <li>No adverse effects to marine biota</li> </ul>	●	●		<p><b>Control Measures:</b></p> <ul style="list-style-type: none"> <li>Final mooring pattern has been reviewed to ensure that anchoring impacts will not affect sensitive habitats</li> <li>ISV will be dynamically positioned, avoiding use of anchors</li> <li>Minimum impact anchoring procedures implemented</li> </ul> <p><b>Mitigation Measures:</b></p> <ul style="list-style-type: none"> <li>Flowlines and umbilicals will be laid directly onto seabed, rather than trenched</li> </ul>
<b>Water Quality: Foodscraps</b>	<ul style="list-style-type: none"> <li>No significant adverse effect on water quality</li> <li>No adverse effects on marine biota</li> <li>Maximise efficient resource utilisation</li> <li>Minimise incremental increase to environmental impact associated with onshore disposal as far as possible</li> </ul>	●	●	●	<p><b>Control Measures:</b></p> <ul style="list-style-type: none"> <li>No discharge of food scraps will occur in Exmouth Gulf</li> <li>Non-food material will be segregated and stored on board for onshore disposal</li> </ul> <p><b>Mitigation Measures:</b></p> <ul style="list-style-type: none"> <li>Food scraps and other putrescible wastes will be disposed of in accordance with MARPOL 73/78 Annex V</li> <li>All food scraps will be macerated to less than 25 millimetres</li> </ul>
<b>Water Quality: Sewage</b>	<ul style="list-style-type: none"> <li>No reduction in ambient water quality</li> <li>No adverse effects on marine biota</li> <li>No adverse aesthetic effects.</li> </ul>	●	●	●	<p><b>Control Measures:</b></p> <ul style="list-style-type: none"> <li>Sewage treatment plant or sewage treatment facilities on MODU, ISV, &amp; support vessels shall comply with MARPOL 73/78 Annex IV requirements.</li> <li>No untreated sewage shall be discharged within 12 nm from the nearest land, in accordance with MARPOL 73/78, and no treated sewage will be discharged within 3 nm from land.</li> </ul> <p><b>Mitigation Measures:</b></p> <ul style="list-style-type: none"> <li>As a minimum, sewage will be capable of passing through minimum mesh size of 25 millimetres and disinfected prior to disposal</li> <li>Sewage and greywater will be disposed of in accordance with MARPOL 73/78 Annex IV</li> <li>Between 3 – 12 NM offshore, MARPOL Annex IV Regulation 11 (Discharge of</li> </ul>

Aspect	Objective	MODU	ISV	Support	Performance Criteria
					Sewage) shall apply. <ul style="list-style-type: none"> <li>Sewage that is discharged between 3 -12 NM from the nearest land shall be treated with a facility that meets MARPOL Annex IV, Regulation 9.1.2 (approved sewage and disinfecting system).</li> </ul>
<b>Water Quality:</b> Drilling Muds	<ul style="list-style-type: none"> <li>No significant alteration of sediment characteristics</li> <li>No contamination of sediments</li> <li>No adverse effect on marine biota.</li> </ul>	●			<b>Control Measures:</b> <ul style="list-style-type: none"> <li>Water-based muds to be used as preference whenever possible and practicable while meeting technical constraints</li> <li>Wells designed to minimise volumes of drill muds required while meeting technical constraints</li> <li>SBMs recovered and returned to shore for recycling or disposal</li> <li>Selection of mud type with least potential for environmental effects while meeting technical requirements</li> </ul> <b>Mitigation Measures:</b> <ul style="list-style-type: none"> <li>Selection of mud type with least potential for environmental effects while meeting technical requirements</li> </ul>
<b>Water Quality:</b> Hydrotest Discharges	<ul style="list-style-type: none"> <li>No significant alteration of sediment characteristics</li> <li>No contamination of sediments</li> <li>No adverse effect on marine biota.</li> </ul>		●		<ul style="list-style-type: none"> <li>Maximise hydrotest of systems prior to arrival on-site (pre-commissioning)</li> <li>Avoid chemical treatments where practicable</li> <li>Chemical selection process has preference for chemicals with least potential for environmental harm</li> <li>Hydrotest discharges activities to meet legal requirements and the commitments made in this Pyrenees Development Project EP.</li> </ul>
<b>Water Quality:</b> Deck Wash-Down; hydrocarbon & chemicals handling, storage, loading and offloading	<ul style="list-style-type: none"> <li>No significant adverse effect on water quality</li> <li>No adverse effects on marine biota</li> <li>Minimise incremental increase to environmental impact associated with onshore disposal as far as possible</li> </ul>	●	●	●	<b>Control Measures:</b> <ul style="list-style-type: none"> <li>All hazardous chemicals &amp; fuel storage areas will be banded / contained</li> <li>An approved chemicals handling, storage &amp; disposal procedure, as well as a refuelling and bulk transfer procedure shall be in place at the start of project activities</li> <li>No fuel bunkering or chemicals loading/offloading shall commence after dark</li> <li>ISV, MODU and support vessels will have current MARPOL compliant Shipboard Oil Pollution Emergency Plan (SOPEP)</li> <li>No wastes will be routinely discharged via deck washdown</li> <li>Operating and maintenance procedures to restrict leakages and small spills</li> <li>Equipment onboard MODUs, ISV, and support vessels for responding to, and cleaning up, small spills of oils and other chemicals as per SOPEP requirements</li> <li>The oil content of deck drainage without dilution shall not exceed 15 ppm as per MARPOL</li> <li>Slops water will be monitored for oil-in-water content Discharge of deck drainage will meet all relevant legislative requirements, rain falling on deck areas will be discharged directly overboard, as will deck washdown</li> </ul>

Aspect	Objective	MODU	ISV	Support	Performance Criteria
					<b>Mitigation Measures:</b> <ul style="list-style-type: none"> <li>• Small deck spills contained and cleaned up</li> <li>• Drainage from utility areas where leaks are likely will be collected and processed by oily water separator system such as slops tanks</li> <li>• Chemical selection process has preference for chemicals with least potential for environmental harm</li> <li>• Quick response to repair leaks and clean up spills to deck</li> </ul>
<b>Water Quality:</b> Antifouling Leachate	<ul style="list-style-type: none"> <li>• No significant adverse effect on water quality</li> <li>• No adverse effects on marine biota</li> </ul>	•	•	•	<b>Control Measures:</b> <ul style="list-style-type: none"> <li>• Only legally permitted antifouling paints will be used</li> </ul>
<b>Waste Disposal:</b> General Non-Hazardous Waste	<ul style="list-style-type: none"> <li>• Minimise incremental increase to environmental impact associated with onshore disposal as far as possible</li> <li>• Maximise efficient resource utilisation</li> </ul>	•	•	•	<b>Control Measures:</b> <ul style="list-style-type: none"> <li>• An approved Waste Management Plan shall be in place before the MODUs and ISV</li> <li>• No solid wastes to be discharged overboard</li> <li>• Limit waste creation at site by application of the waste management hierarchy</li> <li>• MODUs and ISV and support vessels to have waste management plan in place that has been reviewed by BHPB and found to, at least, meet all of MARPOL requirements for waste management (including recording of amounts)</li> </ul> <b>Mitigation Measures:</b> <ul style="list-style-type: none"> <li>• Skips provided for waste containment are to have covers to prevent material being blown overboard</li> <li>• Segregation of all waste at site, onshore disposal, recycling where practicable (note 'practicable' in this context includes a consideration of the net benefit of recycling compared to disposal for the particular waste stream in question)</li> <li>• Waste disposed of to licensed receipt facilities.</li> </ul>
<b>Waste Disposal:</b> Hazardous Waste	<ul style="list-style-type: none"> <li>• Avoid contamination of the marine and terrestrial environment</li> <li>• Minimise incremental increase to environmental impact associated with onshore disposal</li> <li>• Maximise efficient resource utilisation</li> </ul>	•	•	•	<b>Control Measures:</b> <ul style="list-style-type: none"> <li>• Storage areas for hazardous liquid waste shall be bunded / contained</li> <li>• No discharge of hazardous materials to sea</li> <li>• Limit creation of hazardous waste through tendering and contracting process, e.g. chemical selection process has preference for chemicals with least potential for environmental harm</li> <li>• MODU, ISV, and support vessels to have waste management plan in place that has been reviewed by BHP Billiton and found to, at least, meet all of MARPOL requirements for waste management (including recording of amounts)</li> <li>• Containers clearly marked, stored in secure areas designed to prevent and contain spills</li> <li>• Material Safety Data Sheets (MSDS) will be available for all chemical materials</li> <li>• Defined facility procedures for transfers</li> <li>• Procedures to track hazardous wastes</li> </ul>

Aspect	Objective	MODU	ISV	Support	Performance Criteria
					<p>until final disposal</p> <ul style="list-style-type: none"> <li>• Defined facility procedures for transfers</li> <li>• Storage areas for hazardous liquid waste shall be banded / contained</li> <li>• No discharge of hazardous materials to sea</li> <li>• Limit creation of hazardous waste through tendering and contracting process, e.g. chemical selection process has preference for chemicals with least potential for environmental harm</li> </ul> <p><b>Mitigation Measures:</b></p> <ul style="list-style-type: none"> <li>• Hazardous waste segregated offshore for onshore recycling or disposal to licensed onshore facility</li> <li>• Waste Management Plans in place</li> </ul>
<b>Greenhouse Gas Emissions</b>	<ul style="list-style-type: none"> <li>• Minimise contribution of greenhouse gases to atmosphere</li> <li>• Efficient use of resources</li> </ul>	•	•	•	<p><b>Mitigation Measures:</b></p> <ul style="list-style-type: none"> <li>• Appropriate maintenance of equipment to ensure efficient operation</li> <li>• Compliance with MARPOL 73/78 Annex VI</li> </ul>
<b>Accidental Introduction of Marine Pest Species</b>	<ul style="list-style-type: none"> <li>• No introduction of exotic marine species</li> </ul>	•	•	•	<p><b>Control Measures:</b></p> <ul style="list-style-type: none"> <li>• Implement AQIS and IMO regulations for ballast water management</li> <li>• Biofouling risk assessment and treatment in accordance with Woodside's 'Management of Invasive Marine Species' methodology</li> <li>• Ballast water assessed as being 'high risk' must not be discharged into Australian ports or waters.</li> </ul> <p><b>Mitigation Measures:</b></p> <ul style="list-style-type: none"> <li>• Installation and support vessel vetting and operating procedures</li> </ul>