

SCOPE OF WORK

The Stybarrow Development covers the Stybarrow and Eskdale fields within the WA-255-P permit and will be carried out under Production Licence WA-32-L. This production permit is jointly owned by BHP Billiton Petroleum (Australia) Pty Ltd (Operator) and Woodside Energy Ltd.

The 'Stybarrow Development' consists of five production wells, two gas lift wells, one gas injection well and two water injection wells. These wells are connected to a Floating Production Storage and Offloading (FPSO) facility, which has a design life of 15 years.

The Stybarrow FPSO is a new build double hulled tanker. 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.

Once separated from gas and water, crude oil will be exported from the FPSO onto trading tankers. This will initially occur once every seven to ten days initially, becoming less frequent as production declines over the life of the field. During normal operations, gas and produced water will be reinjected into field reservoirs.

LOCATION

The Stybarrow Development area is located approximately 40 km north-west of Exmouth, 22 km north-west of the northern boundary of the Ningaloo Marine Park (Commonwealth Waters) and 80 km west of the Griffin Venture (Figure 1). The Stybarrow Development consists of nine wells drilled from four drilling centres, connected to an FPSO. The locations of these are outlined in Table 1.

Figure 1: Stybarrow Development Area

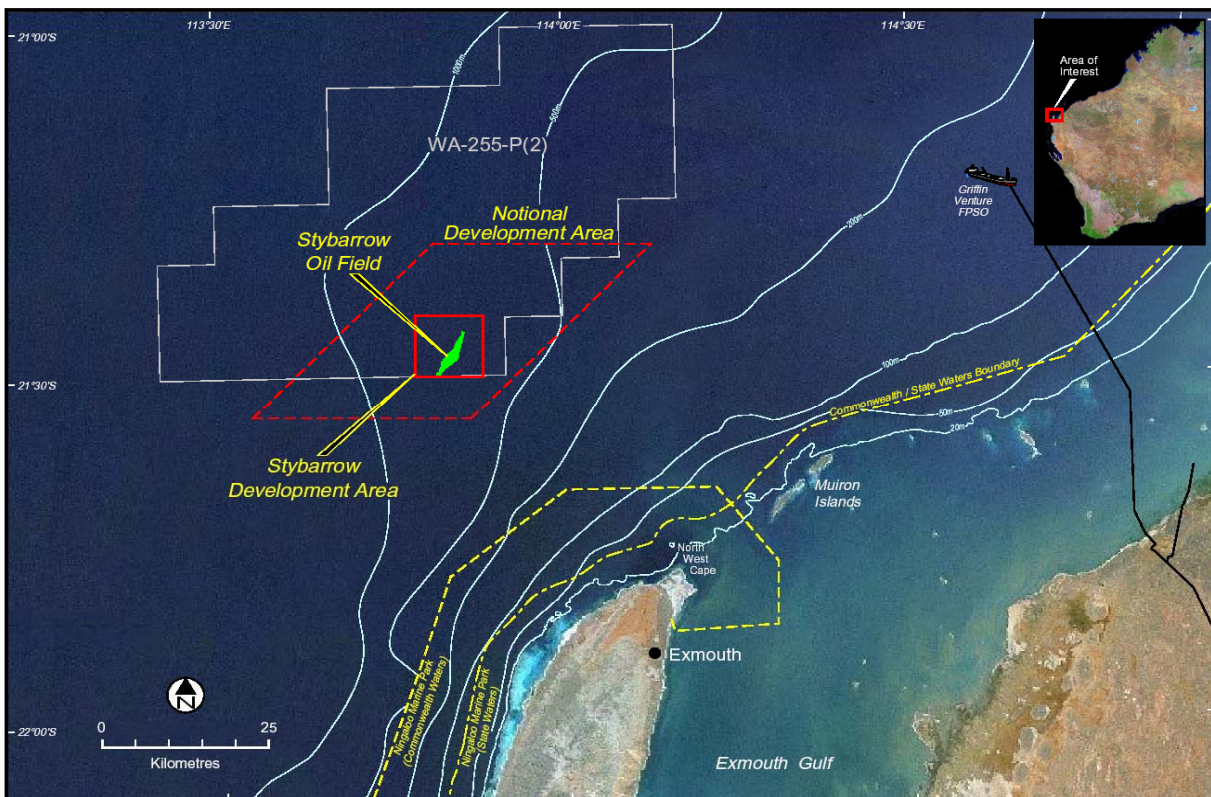


Table 1: Wellhead & FPSO Locations

Wellhead	Drill Centre	Depth (m)	Type	Easting (Longitude) ¹	Northing (Latitude) ¹
FPSO	-	826	FPSO Location	170,855 (113 ° 49' 28.47")	7,624,804 (21 ° 26' 56.96")
Stybarrow I2 Stybarrow I3	A	801	Deviated water injector I-2 Deviated water injector I-3	173,133 (113° 50' 46.01")	7,622,672 (21° 28' 07.70")
Stybarrow H3 Stybarrow H4 Stybarrow I1	B	836	Horizontal producer H-3 Horizontal producer H-4 Deviated water injector I-1	171,000 (113° 49' 31.56")	7,622,050 (21° 28' 26.50")
Stybarrow H1 Stybarrow H2	C	857	Horizontal producer H-1 Horizontal producer H-2	171,420 (113° 49' 44.49")	7,619,714 (21° 29' 42.64")
Eskdale EH1 Eskdale EG1	D	810	Horizontal producer EH-1 Deviated gas injector EG-1	170,030 (113° 49' 05.16")	7,632,340 (21° 22' 51.68")

RECEIVING ENVIRONMENT

Water depths at the development site range from 800 to 900 m. The seabed at the well centres has been found to comprise very soft sand/silt and carbonate clays of 10 to 20 m thickness. Remote camera footage of the Stybarrow location shows a relatively low abundance of invertebrate fauna, with occasional deepwater sponges, echinoderms and transient crustaceans and bottom dwelling fish.

The closest population centre to the development area is the town of Exmouth. Exmouth is a popular tourist centre based in large part on the natural resources contained in the Cape Range National Park and Ningaloo Marine Park. Other commercial activities in the Exmouth region include prawn fisheries and defence related activities.

BHPB has consulted with the Exmouth Community over a number of years, as BHPB has been active in the region for some time. Consultation has 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;
- Periodic written newsletter updates posted to stakeholders; and
- A 1800 toll-free telephone number.

ENVIRONMENTAL RISK ASSESSMENT AND MANAGEMENT

Stybarrow Operations follow the Stybarrow Operations Health, Safety, Environment and Community Management System (HSEC MS), which has been developed in accordance with BHP Billiton HSEC Management Standards and BHP Billiton Sustainable Development Policy. These systems are consistent with ISO14 000 series Environmental Management Systems and OHSAS 18 001 Safety Management System requirements. 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 2 summarises the key environmental aspects and the operations related activities that may lead to these aspects being adversely affected.

Table 2: Environmental Aspects and Operational Activity Interface

Activity	Aspect																							
	Physical presence	Light	Noise	Sediment impacts	Water quality	Biota impacts	General wastes	Hazardous wastes	Sullage (gallery scraps)	Sewage and grey water	Ballast water	Hydrocarbon / Chemical contamination	Produced water	Deck drainage / oil in water	Desalination brine	Cooling water	Subsea control fluids	Anti fouling	Greenhouse gas emissions	Other combustion products	Venting and fugitive emissions	Ozone depleting substances	Onshore waste disposal	
Routine Events																								
FPSO presence	√	√	√	√		√	√		√	√	√							√						
Power generation			√																√	√				
Oil production												√					√				√			
Oil processing					√							√	√											
Water injection												√							√					
Gas injection												√							√					
Seawater treatment					√							√			√	√								
Cooling or heating					√											√								
Flaring and venting												√							√		√			
Use of safety systems																							√	
Maintenance							√					√												√
Cargo offloading	√											√									√			
Materials loading	√											√							√	√				
Non-hazardous waste disposal							√																	√
Hazardous waste disposal								√				√												√
Sewage and grey water	√				√	√				√														
Food waste disposal	√				√	√			√															
Deck drainage (open, closed, bilge & slops)					√							√		√										
Diesel, chemicals & material storage	√											√												
Helicopter operations			√																√	√				
Support vessel services	√	√	√			√	√		√	√	√			√									√	
Non-routine events																								
Well completions	√	√	√				√	√				√												
Well work-overs	√						√	√				√												
Cyclone response			√								√	√							√	√				
Flaring		√																	√					
Produced water discharge												√	√											
Accidental events																								
Hydrocarbon spills	√			√	√	√						√												
Chemical spills	√			√	√	√						√												
Introduced species	√					√					√													

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

- BHPB Sustainable Development Policy requirements;
- BHPB HSEC Management Standards;
- Legal requirements;
- Community comments received during consultation; and
- Technology options and feasibility.

Table 3 provides a summary of environmental objectives, standards and performance criteria. All staff and contractors taking part in the Stybarrow Operations will be advised of their responsibilities prior to commencement of activities. This will occur through induction and awareness presentations that will be given to all crew.

Further information regarding Stybarrow Operations may be obtained from BHPB's external affairs 1800 036 247 or by writing to:

External Affairs
BHP Billiton Petroleum Pty Ltd
Central Park 152-158 St Georges Terrace
PERTH WA, 6000.

Table 3: Summary of Environmental Objectives, Standards and Performance Criteria

Aspect	Environmental Objectives	Standards & Guidelines	Performance Criteria
Environmental Risks Requiring ALARP Demonstration (EWRM value >30)			
Noise	<ul style="list-style-type: none"> No significant adverse effect on marine biota No significant impact on coastal or island communities 	<ul style="list-style-type: none"> EPBC Act Regulations 2000 Pt 8 P(SL)(MoE) Regulations 1999, r.13 and 14 APPEA Code of Environmental Practice BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No. G19 HSEC Risk Management HSEC Guideline No. T07 Risk Criteria/ALARP Principle 	Helicopter flights will be carried out during daylight hours only, except if required during emergencies (and training purposes).
			Helicopter flights routed to avoid sensitive areas (e.g. seabird nesting areas Muiron Island)
			Helicopters will not approach within 500 metres (vertical and horizontal) of any observed whales unless necessary for take off and landings on the FPSO.
			Underwater noise survey during routine operations to be carried out by noise specialist and reported to DoIR and DEW
			Vessel-Whale interaction procedures to be implemented to avoid interference with whales
General wastes	<ul style="list-style-type: none"> Minimise incremental increases in waste production Maximise efficient resource utilisation 	<ul style="list-style-type: none"> EPBC Act 1999 Environmental Protection Act 1986 (WA) APPEA Code of Environmental Practice ICCM Framework BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No G09 Non-hazardous Wastes, Hazardous Wastes and Emissions HSEC Guideline No. T07 Risk Criteria/ALARP Principle 	Approved Waste Management Plan in place
			Waste Management Audit
			Hazardous material to be properly contained and managed
			Segregation of all waste at site where practicable
			Volumes of wastes transferred ashore will be monitored and recorded
			Induction will cover waste management procedures
			NORM monitoring and handling will be carried out in compliance with NORM management procedure
			NORM disposal will be carried out in compliance with government approved disposal option
			Audit of tanker vetting procedures
			Reporting of non-compliance with AQIS ballast water requirements to DoIR
Sewage and greywater	<ul style="list-style-type: none"> No significant reduction in ambient water quality No significant adverse effects on marine biota No significant adverse aesthetic effects. 	<ul style="list-style-type: none"> P(SL)A 1967, Schedule c. 222 (4) P(SL)(MoE) Regulations 1999, r.29 (1) Protection of the Sea (Prevention of Pollution From Ships) Act 1993, Division 2 APPEA Code of Environmental Practice ANZECC Guideline for Fresh and Marine Water Quality BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No. T07 Risk Criteria/ALARP Principle 	Volumes of sewage and greywater discharged to sea will be estimated.
			Water treatment facility operating within manufacturer specification
			Sewage and greywater disposed of in accordance with Marpol 73/78 Annex IV

Aspect	Environmental Objectives	Standards & Guidelines	Performance Criteria
Slops Discharge	<ul style="list-style-type: none"> No significant reduction in ambient water quality No significant adverse effects on marine biota No significant adverse aesthetic effects. 	<ul style="list-style-type: none"> EPBC Act 2000 P(SL)A 1967 Schedule, c.285 and 616 P(SL)(MoE) Regulations 2000, r.13, 14 and 29 (1) ANZECC Guidelines for Fresh and Marine Water Quality BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No. T07 Risk Criteria/ALARP Principle 	Slops and produced water discharged in compliance with technical procedure STPN-PP-0009.
			Slops water will be monitored for oil-in-water content during marine mode (≤ 15 mg/L limit). Non-compliance of OIW levels reported to DoIR
			Slops water will be monitored for oil-in-water content when PFW is diverted to the tank (≤ 30 mg/L 24hr average). Non-compliance of OIW levels reported to DoIR
			Process and utility equipment integrity checks
			Operating and maintenance procedures audited
			Automatic diversion to holding tanks if concentration oil in water of overboard discharges exceeds 25 ppm.
			Batch dosage of production chemicals will be avoided during periods of production water discharge to sea
			Chemical selection process considers environmental friendly chemicals
			Checks conducted of the in-line analyser
			Calibration of the in-line analyser
			Function tests of the in-line analyser
Records of volumes and OIW content of slops discharges maintained			
Chemical spills	<ul style="list-style-type: none"> No significant adverse effect on water quality No significant adverse effects on marine biota 	<ul style="list-style-type: none"> EPBC Act 1999 P(SL)(MoE) Regulations 1999 r. 13 and r.14) P(SL)(MoSoOF) Regulations r. 24.(1) Environmental Protection Act 1986 (WA) APPEA Code of Environmental Practice ICCM Framework ANZECC Guidelines for Fresh and Marine Water Quality BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No. T07 Risk Criteria/ALARP Principle 	Internal recording and reporting of all spills in accordance with IHR procedures.
			Inductions to project personnel covering chemical management
			Oil Spill Response Plans and associated periodic response exercises
			Inspections of spill kits conducted to ensure adequate stocks are maintained
			Certified bulk chemical containers ('bulkies') are used for transportation and storage of chemicals
			Chemical storage is properly bunded
			Records of chemical consumption rates maintained.
			No chemical loading/offloading commencing after dark
			Inspection and integrity maintenance of the chemical injection flow metres and transmitters conducted.
			Assessments made of chemical dosage rates and effectiveness
			Hydrocarbon spills (small and medium)
Internal recording and reporting of all spills in accordance with IHR procedures.			
Notice to mariners and establishment of exclusion zones			
Oil Spill Response Plan is in place, reviewed and tested through periodic response exercises			
Deployment capability of oil spill equipment within 12 hours			

Aspect	Environmental Objectives	Standards & Guidelines	Performance Criteria
		<ul style="list-style-type: none"> • ICCM Framework • ANZECC Guidelines for Fresh and Marine Water Quality • BHP Billiton Sustainable Development Policy • BHP Billiton HSEC Management Standards • HSEC Guideline No. T07 Risk Criteria/ALARP Principle • HSEC Guideline No G10 Oil Spills 	<p>Periodic review of trends in spill related incidents.</p> <p>Real-time oil spill fate and trajectory modelling available at all times</p> <p>Stocks of spill response equipment including dispersants on-site and in Exmouth and Dampier are inspected to ensure adequate stocks are maintained</p> <p>Offtake and bunkering operations conducted in accordance with the 'Offtake Operations Manual' and Diesel Oil Bunkering Operations</p> <p>Visual inspections of offtake and bunkering hoses and hose reels conducted.</p> <p>Offloading hose integrity management through periodic pressure testing</p> <p>Support vessel procedures are maintained</p> <p>Threshold sea-state conditions for re-fuelling are maintained as per tanker offtake and bunkering procedures</p> <p>Ongoing critical equipment integrity checks</p> <p>Lifting procedures e.g. to avoid dropped objects are in place.</p> <p>Riser emergency shutdown valve (SDV's and BDV's) testing completed.</p> <p>Production well SCSSV's leak-off tests conducted</p> <p>Periodic ROV surveys of flowlines and other sub-sea equipment to ensure integrity</p> <p>Trading tanker certification and vetting system, i.e. no 'ships of shame'</p> <p>Cyclone monitoring and related procedures and disconnection of offtakes in advance of cyclones or above nominated sea-state conditions</p> <p>Operational procedures to avoid potential for spills</p> <p>Compliance with MARPOL requirements when in marine mode</p> <p>Personnel of FPSO and supply vessels training and competency assessment in emergency and oil spill response measures.</p> <p>Scheduled external hull inspections conducted to ensure class requirements are maintained.</p> <p>Class inspections of tanks and void spaces conducted.</p>
<p>Greenhouse Gas</p>	<ul style="list-style-type: none"> • Minimise contribution of greenhouse gases to atmosphere consistent with BHP Billiton's Climate Change Policy • Efficient use of resources 	<ul style="list-style-type: none"> • APPEA Code of Environmental Practice • BHP Billiton Sustainable Development Policy • BHP Billiton Climate Change Policy • BHP Billiton HSEC Management Standard • HSEC Guideline No G17 Energy and Greenhouse • HSEC Guideline No G20 Energy and Greenhouse Gas Management Plan 	<p>Procedures in place for GHG emitting equipment to ensure efficient operation</p> <p>Monitoring procedures in place to detect fugitive emissions</p> <p>Operational management procedures of cargo tank vapour spaces to reduce emissions to ALARP</p> <p>Flaring management plans in place, to define procedures in event of flaring of surplus gas</p> <p>Flared gas intensity limit defined and approved for the facility. Non compliance to be reported to DoIR</p> <p>Calculation of flare gas flow rate is pressure and temperature compensated and performed by Flare Gas Flow Computer.</p> <p>Inspection and integrity maintenance conducted of the HP and LP flare gas flow meters and transmitters conducted</p> <p>Inspection of the HP Flare Tip and LP Flare Tip conducted.</p>

Aspect	Environmental Objectives	Standards & Guidelines	Performance Criteria
			Inspection and integrity maintenance of the HP and LP Flare Tip sensors conducted. PSV recertification conducted. Stybarrow GHG Management Plan is periodically reviewed, updated and communicated to the workforce. Reporting of volumes of gas flared. Emissions from gas flared calculated using E&P Forum Emission Factors. Periodic review / assessment of actual flaring volumes against predicted volumes.
Marine fauna impacts	<ul style="list-style-type: none"> No significant adverse effects on marine biota 	<ul style="list-style-type: none"> EPBC Act 1999 P(SL)(MoE) Regulations 1999, r.13 and 14 APPEA Code of Environmental Practice Protection of the Sea (Prevention of Pollution From Ships) Act 1993 Division 2 MARPOL 73/78 Annexe IV ANZECC Guideline for Fresh and Marine Water Quality BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standard 	Adherence to EPBC Guidelines for interactions with cetaceans. Cetacean injury or death will be reported to DEW Visual whale sighting records will be recorded on standard DEW recording sheets and forwarded to DEW. Boat-based whale surveys will be carried out by cetacean specialists based on a Before-After-Control-Impact plan. The need for and frequency of whale monitoring will be reviewed after the first survey in consultation with DEW Cetacean interaction guidelines in place to reduce risk to cetaceans Reduce propeller power to minimum required for safety manoeuvres Noise and light impacts will be limited where possible TBT will not be used in antifouling paint on FPSO AQIS requirements will be followed for ballast water management
Environmental Risks Requiring Management Controls (EWRM value 10 - 30)			
Large oil spills	<ul style="list-style-type: none"> No significant adverse effect on water quality No significant adverse effects on marine biota 	<ul style="list-style-type: none"> BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No. T07 Risk Criteria/ALARP Principle HSEC Guideline No G10 Oil Spills 	As per small and medium hydrocarbon spills
Subsea control fluids	<ul style="list-style-type: none"> No significant adverse effect on water quality No significant adverse effects on marine biota 	<ul style="list-style-type: none"> EPBC Act 1999 P(SL)(MoE) Regulations 1999 r. 13 and r.14) P(SL)(MoSoOF) Regulations r. 24.(1) Environmental Protection Act 1986 (WA) APPEA Code of Environmental Practice ICCM Framework ANZECC Guidelines for Fresh and Marine Water Quality BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No. T07 Risk Criteria/ALARP 	Low environmental impact chemicals selected Tank level detection (offshore) Usage of chemicals is recorded

Aspect	Environmental Objectives	Standards & Guidelines	Performance Criteria
		Principle • BHP Billiton HSEC Management Protocol: PR 9.1 - Environment	
Multiple Users	<ul style="list-style-type: none"> No significant impacts upon other users of the sea No significant impact on visual amenity for coastal or island communities 	<ul style="list-style-type: none"> EPBC Act 1999 P(SL)(MoE) Regulations 1999 r. 13 and r.14) APPEA Code of Environmental Practice BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standard BHP Billiton HSEC Management Protocol: PR 9.1 - Environment 	Flared gas volumes will be recorded Complaints from other users are recorded Application of safety zones around FPSO Radio communication to other users of the sea
Dropped Objects	<ul style="list-style-type: none"> No significant impact to seabed habitat No significant impact to seabed biological communities No significant adverse effects to marine biota 	<ul style="list-style-type: none"> P(SL)A 1967, s.124 P(SL)(MoE) Regulations 1999, r.13 and 14 APPEA Code of Environmental Practice BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No. T07 Risk Criteria/ALARP Principle 	Loading / offloading procedures Use fixed moorings and DP where possible
Light	<ul style="list-style-type: none"> No significant adverse effect on marine biota. No significant impact on visual amenity for coastal or island communities 	<ul style="list-style-type: none"> P(SL)(MoE) Regulations 1999, r.13 and 14 APPEA Code of Environmental Practice BHP Billiton Sustainable Development Policy BHP Billiton HSEC Management Standards HSEC Guideline No. T07 Risk Criteria/ALARP Principle 	Flared gas volumes will be recorded Re-injection of surplus gas will avoid intense flaring during normal operations Light spill to be minimised but kept at sufficient levels for safe operation