

OKHA OPERATIONS

CARNARVON BASIN, NORTH-WEST AUSTRALIA

Woodside is submitting a revised Environment Plan for the Okha Floating Production, Storage and Offloading (FPSO) facility in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (the regulations).

The regulations require that Environment Plans for operating facilities be revised at least every five years.

The Okha facility is operated by Woodside on behalf of the North West Shelf Project participants. The participants are Woodside Energy Ltd., BHP Billiton Petroleum (North West Shelf) Pty Ltd, BP Developments Australia Pty Ltd, Chevron Australia Pty Ltd, Japan Australia LNG (MIMI) Pty Ltd and Shell Australia Pty Ltd.

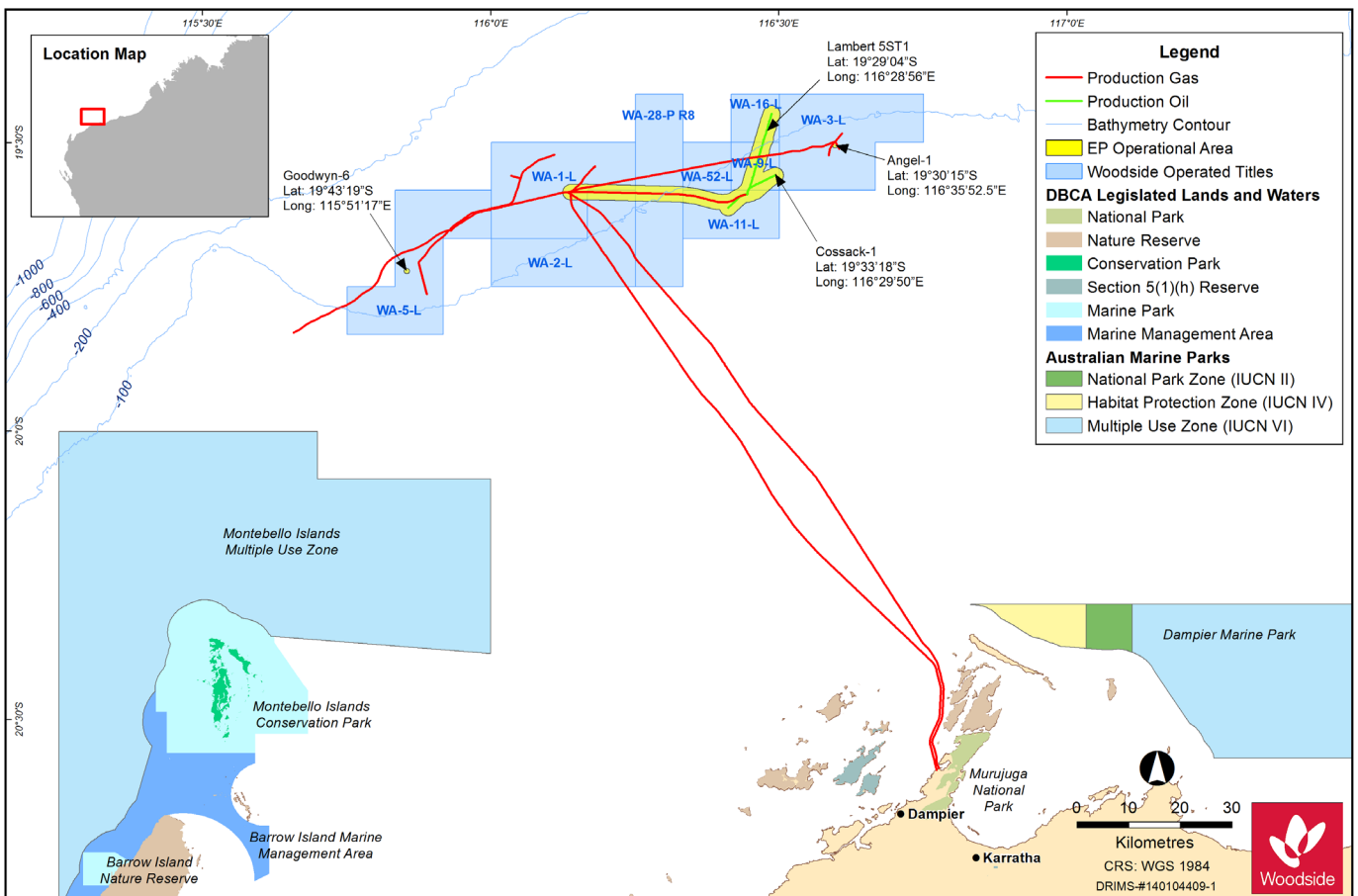


Table 1. Activity summary

Okha FPSO facility	
Facility type	<ul style="list-style-type: none"> + Oil and gas production facility + Subsea wells and infrastructure, a riser turret production and mooring system, the Okha FPSO and a gas export line
Distance from facility to nearest port	+ 115 km north west of Dampier, Western Australia
Water depth at facility	+ Approximately 80 m
Facility coordinates	<ul style="list-style-type: none"> + Latitude: 19° 35' 13"S + Longitude: 116° 26' 29"E
Number of wells	<p>There are 13 subsea production wells tied back to the Okha FPSO, of which 10 are capable of producing hydrocarbons</p> <ul style="list-style-type: none"> + One well tied back from the Cossack field + Eight wells tied back from the Wanaea field + Two wells tied back from the Lambert field + Two wells tied back from the Hermes field <p>Four suspended exploration wells will also be included in the Environment Plan, these being Goodwyn-6, Angel-1, Cossack-1 and Lambert 5STI.</p>
Commissioned	+ The Okha FPSO commenced production in September 2011. Prior to this, the oil and gas from the fields were produced through the Cossack Pioneer FPSO, which commenced production in 1995
Distance to nearest marine park	<ul style="list-style-type: none"> + Approximately 120 km north west of the Montebello Islands Marine Park (WA) + Approximately 72 km north west of Montebello Marine Park - Multiple Use Zone (Cwlth)

Operations

The Okha FPSO extracts, processes, stores and offloads oil and export gas from the Cossack, Wanaea, Lambert and Hermes fields.

Oil is dispatched from the FPSO to trading tankers whilst export gas is transported via a 32 km gas export line to North Rankin Complex (NRC). Gas is subsequently transported from the NRC to the Karratha Gas Plant via two 130 km trunklines.

The offshore production system consists of subsea wells and infrastructure (e.g. wellheads, Xmas trees, manifolds, umbilicals, flowlines and risers), a riser turret production and mooring system, the FPSO and the gas export line.

Activity Location

The Okha FPSO is located about 115 km north west of Dampier, Western Australia with petroleum activities undertaken in production licence areas WA-11-L, WA-9-L, WA-16-L.

The Operational Area for this Environment Plan includes:

- + The Okha FPSO and the area around the facility extending out to 1500 m to allow for offtake activities (including the 500 m petroleum safety zone)
- + The Okha FPSO subsea infrastructure, including wells and flowlines, and an area 1500 m from the infrastructure
- + The gas export line to a pipeline end manifold adjacent to NRC which is located in WA-4-PL and an area within 1500 m around the infrastructure
- + The four suspended exploration wells and an area within 500 m around the infrastructure

Activity Details

The Okha FPSO normally operates 24 hours per day, 365 days per year. Activities undertaken include:

Production and maintenance

Production and maintenance involve receiving hydrocarbons from the reservoirs, processing, storing oil for offloading to export tankers, exporting gas to the NRC and supporting operations.

Routine inspection, maintenance and repair of the Okha FPSO may be undertaken. Inspection and maintenance are carried out to ensure the integrity of the facility and identify any risks if they pose a risk.

Production and major projects

Major projects involves refurbishment, modification or major maintenance on the facility. An assessment will be undertaken whether an Environment Plan revision is required if a project scope has the potential to result in significant change to the facility.

FPSO marine (disconnected) mode

The FPSO can operate as a self-propelled vessel to avoid adverse weather conditions or for maintenance or modification works at a shipyard. The FPSO must comply with all applicable maritime regulations once disconnected from the riser turret mooring.

Activity Vessels

Support vessels are used to transfer materials and equipment to and from the facility. While in the field, vessels also backload materials and segregates waste for transportation back to the King Bay Supply Facility in Dampier, as well as carrying out standby duties during helicopter operations and working over the side activities. The current schedule is for a support vessel to visit the facility about every two weeks.

Support vessels are also required for inspection, monitoring, maintenance and repair activities, and may vary depending on operational requirements, vessel schedules and capability. Activities will be conducted intermittently and over short durations in the immediate vicinity of subsea infrastructure and no additional exclusion zones will be in place during these activities.

Implications for Stakeholders

Woodside will consult relevant stakeholders whose interests, functions, and activities may be affected by the proposed activities. We will also keep other stakeholders who have identified an interest in the activities informed about our planned activities.

Woodside has undertaken an assessment to identify potential risks to the marine environment and relevant stakeholders, considering timing, duration, location and potential impacts arising from petroleum activities.

A number of mitigation and management measures will be implemented and are summarised in the Table 2. Further details will be provided in the Environment Plan.

Table 2. Summary of key risks and/or impacts and management measures

Potential Risk and/or Impact	Mitigation and/or Management Measure
Planned	
Chemical use	+ Chemical use will be managed in accordance with Woodside and contractor chemical selection and approval procedures.
Emissions from fuel combustion	+ Procedures to keep emissions from combustion of fuel (e.g. power generation) in line with design specifications will be followed. + Fuel gas is the preferred source of fuel. Emissions will be reported in accordance with regulatory requirements.
Flaring	+ Gas flaring will be managed to a level required for safe and reliable production. + Unplanned flaring will be minimised where possible and managed in accordance with annual performance targets.
Interests of relevant stakeholders including: + Defence activities + Petroleum activities + Commercial fishing activities + Shipping activities	+ Consultation with relevant petroleum titleholders, commercial fishers and their representative organisations, and government departments and agencies to inform decision making for the proposed activity and revision of the Environment Plan.
Marine discharges	+ All routine marine discharges will be managed according to legislative and regulatory requirements and Woodside's Environmental Performance Standards where applicable.
Seabed disturbance	+ Lifting and lifted equipment will be in a safe and serviceable condition to prevent dropped objects. + Lifting operations will be safely performed to minimise potential for dropped objects overboard.
Vessel interaction	+ Use of navigational aids and practices as required by Maritime Regulations to minimise impact on other marine users. + A 500 m radius petroleum safety zone around the Okha FPSO. + A 1500 m radius Operational Area around the Okha FPSO, subsea infrastructure, including wells and flowlines, and the gas export line. + Commercial fishers and other marine users are permitted to use but should take care when entering the Operational Area.
Waste generation	+ Waste generated on the vessels will be managed in accordance with legislative requirements and a Waste Management Plan. + Wastes will be managed and disposed of in a safe and environmentally responsible manner that aims to prevent accidental loss to the environment. + Waste transported onshore will be sent to appropriate recycling or disposal facilities by a licensed waste contractor.
Unplanned	
Hydrocarbon release	+ Appropriate spill response plans, equipment and materials will be in place and maintained. + Appropriate refuelling procedures and equipment will be used to prevent spills to the marine environment.
Introduction of invasive marine species	+ All vessels will be assessed and managed as appropriate to prevent the introduction of invasive marine species. + Compliance with Australian biosecurity requirements and guidance.

Providing feedback

Our intent is to minimise environmental and social impacts associated with the proposed activities, and we are seeking any interest or comments you may have to inform our decision making.

If you would like to comment on the proposed activities outlined in this information sheet, or would like additional information, please contact Woodside before **Wednesday, 7 August 2019**.

Please note that your feedback and our response will be included in our Environment Plan for the proposed activity, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

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Please note that stakeholder feedback will be communicated to NOPSEMA as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise