

North Rankin Complex Commissioning and Operations Environment Plan Summary

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NORTH RANKIN COMMISSIONING AND OPERATIONS ENVIRONMENT PLAN SUMMARY

The following is a summary of the North Rankin Complex Commissioning and Operations Environment Plan (EP), prepared as part of the requirements under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. The EP supersedes the previous North Rankin Alpha (NRA) Operations EP (approved by the Department of Mines and Petroleum in 2007) and replaces the North Rankin B Installation EP for activities associated with Hook Up and Commissioning of NRB as part of the North Rankin Redevelopment Project (NR2 Project).

1. COORDINATES OF THE ACTIVITY

The North Rankin Complex draws hydrocarbons from North Rankin and Perseus Fields. It is comprised of the NRA and NRB platforms and is part of the Woodside operated North West Shelf (NWS) Project asset (refer section 3 below). The North Rankin Complex is located towards the southern end of the North Rankin field in 125 m water depth, approximately 135 km offshore from Dampier on the north-west coast of Western Australia. The coordinates and locations are presented in Table 1 and Figure 1.

Table 1 Coordinates of the North Rankin Complex

Facility	Coordinates (GDA 94)	
	Latitude	Longitude
NRA	19° 35' 08.02' S	116° 08' 12.28' E
NRB	19° 35' 02.56' S	116° 08' 11.22' E

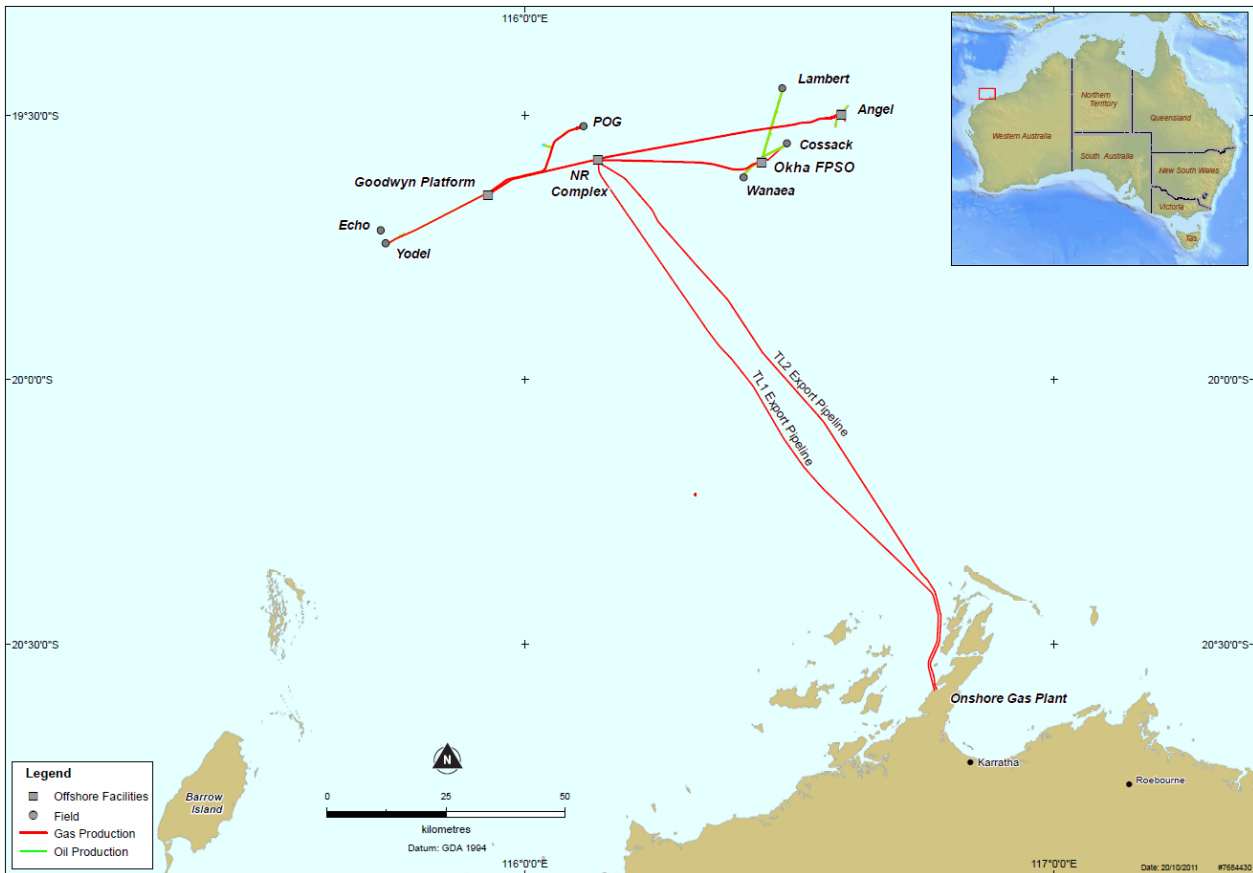


Figure 1 Location of the North Rankin Complex in relation to the Western Australian Coastline

2. THE RECEIVING ENVIRONMENT

The climate of the NWS region shows two distinct seasons: a dry winter from April to August; and a summer from October to March when most rainfall occurs. April and September are transition months during which the summer or winter regime may predominate, or the conditions vary between these two. Winter air temperatures in the NWS region may range (minimum to maximum) from 17°C to 26°C whilst the summer range may be from 25°C to 35°C, based on temperatures recorded by the Bureau of Meteorology at Dampier Port 1991 – 2001.

The benthic community is expected to be similar to other locations in the NWS region which is characterised by low density infauna consisting of mobile burrowing species, including molluscs, crustaceans, and polychaete, sipunculid and platyhelminth worms.

Numerous fish species may occur around the North Rankin Complex, although diversity and occurrence is likely to be less than environments adjacent to offshore islands and the mainland coastline. Migratory species that may occur around the North Rankin Complex include the longfin mako (*Isurus paucus*), shortfin mako (*I. oxyrinchus*) and whale shark (*Rhincodon typus*). While commercial fisheries operate in the area, only the Pilbara Trawl Fishery has any significant catch beyond the 50 m isobath. In general, due to a relatively featureless seabed, areas beyond the 100 m isobath are not very productive for fish.

A number of whale species may be encountered in the region, including sperm, humpback, minke and brydes whales. The location of the North Rankin Complex is within the known humpback whale migratory path.

3. DESCRIPTION OF THE ACTION

The North Rankin Complex underpins gas supply to the onshore Karratha Gas Plant. NRA is a combined drilling, production and accommodation platform which has been in operation since 1984.

The NRB platform is located approximately 100 m west of NRA. The main function of the NRB platform is to provide gas compression and condensate pumping for the fluids produced from the NRA wells and exported via the NRA export facilities. Once installed and operational, NRB will provide the personnel living quarters, power, control and a portion of the utilities for the combined facility, to be referred to as the North Rankin Complex.

The NR2 Project also involves modifications to the existing NRA platform to enable functionality transfer and integration with the new NRB platform. In addition the NR2 Project involves upgrades to the existing NRA facility to allow continued safe operation until end of field life (around 2041).

The North Rankin Complex consists of the NRA and NRB platforms connected by two bridges. NRA receives well fluids (gas, condensate and associated produced water) from the production wells. Well fluids are produced through the flowlines on NRA and routed across the bridge for processing on NRB prior to being routed back to NRA for gas dehydration and condensate dewatering. NRB is primarily a gas processing and condensate pumping facility. The export manifolds on NRA then send the processed gas and condensate to the onshore Karratha Gas Plant. The NRB facilities primarily provide compression facilities to unlock low-pressure reserves from the North Rankin and Perseus Fields.

4. DETAILS OF MAJOR ENVIRONMENTAL HAZARDS AND CONTROLS

Offshore installation activities have been subject to a comprehensive environmental risk assessment process which allows certain impacts and potential risks to be systematically identified and addressed.

The environmental hazards that have been identified as key risks for the operational activities of the North Rankin Complex during commissioning and operations, and the controls/commitments to manage these risks are listed in Table 2.

Table 2: Summary of Key Environmental Hazards and Controls

Hazard	Controls / Commitments
Hydrocarbon release due to wellhead, xmas tree, manifold failure/blowout/ damage	<ul style="list-style-type: none"> • Woodside has determined, and integrated into the production system, a well integrity envelope for each production well. Operations will be conducted within this envelope. • Pressure, temperature and sand production rates will be monitored and recorded using a combination of instruments at the Sub Sea Isolation Valve. These will be compared against design allowances to ensure equipment stays within a safe operating range. • Wells will be continually monitored and to ensure equipment stays within a safe operating range. Regular inspection and maintenance is undertaken. • Spills of hydrocarbon >80 litres to ocean will be reported to the Environment Regulator (as a Reportable Incident). • In the highly unlikely event of a blowout, or partial blowout, the Oil Spill Response Plan and North Rankin Complex Emergency Response Plan will be activated.

5. SUMMARY OF THE MANAGEMENT APPROACH

The management approach follows the Woodside Management System (which is aligned with the ISO14001 international standard for environmental management systems). A systematic approach is followed to identify the sources of risk and potential environmental impacts associated with the activities and to assign a level of significance or risk to each impact. This subsequently assists in identifying and prioritising preventative controls and mitigation measures to ensure environmental impacts are minimised.

Performance objectives, standards, commitments and criteria are identified to assess the performance and implementation of the EP in relation to the description and assessment of environmental risks and impacts. These are consistent with legislative requirements and Woodside's policies, standards and procedures.

Environmental management is the responsibility of the Offshore Installation Manager (OIM).

6. CONSULTATION

The NR2 Project was referred to the then Department of Environment and Heritage (now the Department of Sustainability, Environment, Water, Population and Communities), which concurred

that the NR2 Project was not a controlled action under the *Environmental Protection and Biodiversity Conservation Act 1999*.

Woodside consulted with the Western Australian Department of Mines and Petroleum (DMP) during 2008-2011 as the Designated Authority, with respect to the planned scope of work related to the NR2 Project. Communication with relevant authorities on the Project's environmental management will be ongoing throughout the commissioning and operational phases; this will include but not be limited to the Environment Regulator (DMP followed by the National Offshore Petroleum Safety and Environmental Management Authority [NOPSEMA]) and the Dampier Port Authority.

Consultation with external stakeholders during the commissioning and operations phases of the North Rankin Complex will continue to be undertaken in line with Woodside's External Stakeholder Engagement Operating Standards and requirements of the EP.

7. CONTACT DETAILS

For further information please contact the following Woodside staff:

Commissioning: Environment Adviser North Rankin Redevelopment Project

Operations: Environment Manager (Production)

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