

Offshore petroleum well integrity approvals

July 2017

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is the regulator for health and safety, well integrity and environmental management for offshore petroleum activities in Commonwealth waters and in coastal waters where powers have been conferred.

What role do wells play in oil and gas projects?

Throughout the lifecycle of an oil and gas project, wells are drilled for different purposes including exploration, appraisal and production. There are a number of factors that can increase the likelihood of finding oil and gas, including acquiring and interpreting seismic data to establish a potential drilling target.

Once a prospect has been identified during the exploration campaign, an appraisal drilling campaign is undertaken to determine the potential of the reservoir. If the prospect is financially viable, the project will move forward to the production stage. When the production field reaches the end of its economic life each well is safely plugged and ultimately abandoned.

Offshore drilling

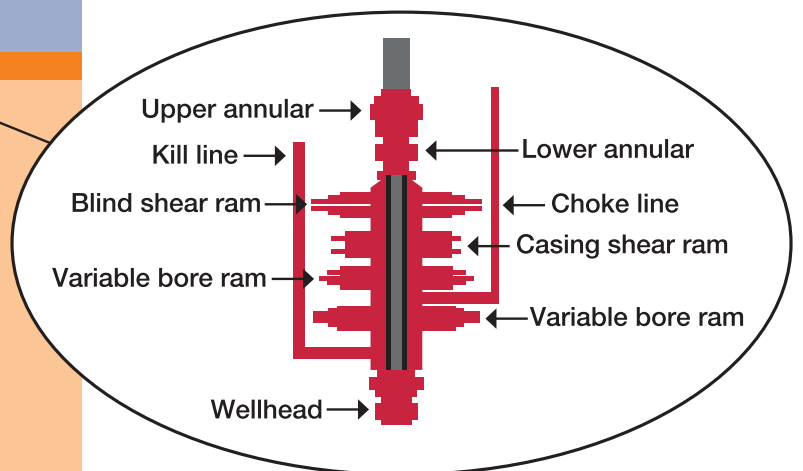
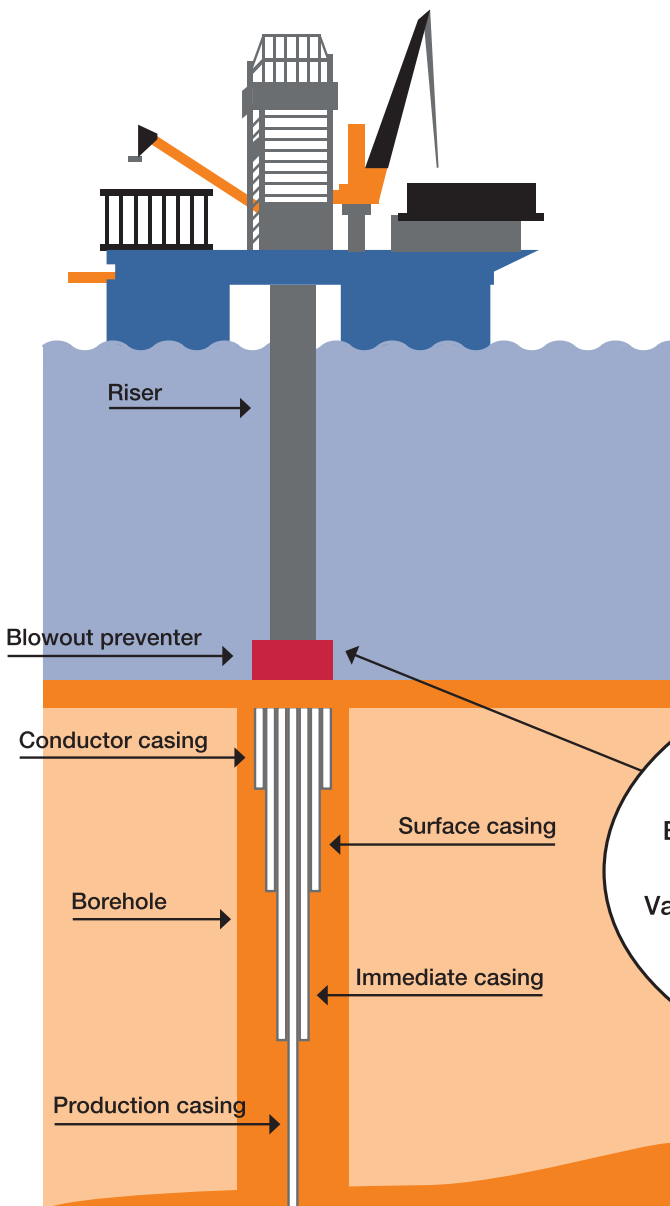
Offshore drilling is a mechanical process and is typically carried out in order to explore for and extract petroleum which lies in rock formations beneath the seabed.

Common types of facilities used to drill offshore wells in Australia include jack-up rigs, semi-submersible rigs, drill ships and platforms. The drilling facility may be fixed to the seabed during the drilling operation, use a mooring system with anchors which are attached to the seabed, or use a dynamic positioning system to keep the facility in place. The selection of a suitable rig or vessel will depend on a range of factors including the water depth, weather and ocean conditions and technical considerations regarding the well.

Who can drill an offshore well in Australia?

An oil and gas company must have been granted a title before they may apply to NOPSEMA for approval to undertake a drilling activity.

NOPSEMA is not involved in decisions regarding the award of titles. The National Offshore Petroleum Titles Administrator (NOPTA) is the day to day administrator of petroleum titles and provides advice to decision makers (the Joint Authority) on key petroleum title decisions under the *Offshore Petroleum Greenhouse Gas Storage Act 2006* and the *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011 (Wells Regulations)*. For information see noppta.gov.au.



Example of an offshore well being drilled



What is NOPSEMA's role in regulating offshore drilling?

Failure to maintain well integrity can lead to major accident events which have the potential to cause widespread damage. A company proposing to undertake drilling activities in NOPSEMA's jurisdiction must submit a well operations management plan (WOMP) to NOPSEMA for assessment and acceptance. Without NOPSEMA's approval well activities cannot be undertaken.

NOPSEMA assesses each WOMP against the requirements of Part 5 of the Wells Regulations.

To regulate this highly technical area, NOPSEMA has a dedicated team of well integrity specialists with extensive experience in offshore oil and gas. NOPSEMA also conducts inspections to monitor and secure a titleholder's ongoing compliance with the commitments made in their WOMP.

What is a WOMP and what does it contain?

The WOMP is a risk management plan that describes the characteristics of the well and the well activities that will be undertaken.

Well activities may include construction, production, intervention and maintenance, artificial lift, suspension and abandonment.

To be accepted by NOPSEMA, the WOMP must clearly demonstrate how the oil and gas company will reduce the risks to maintaining the integrity of the well to levels that are as low as reasonably practicable (ALARP).

The WOMP must also include technical information about the nature and scale of each well activity for example:

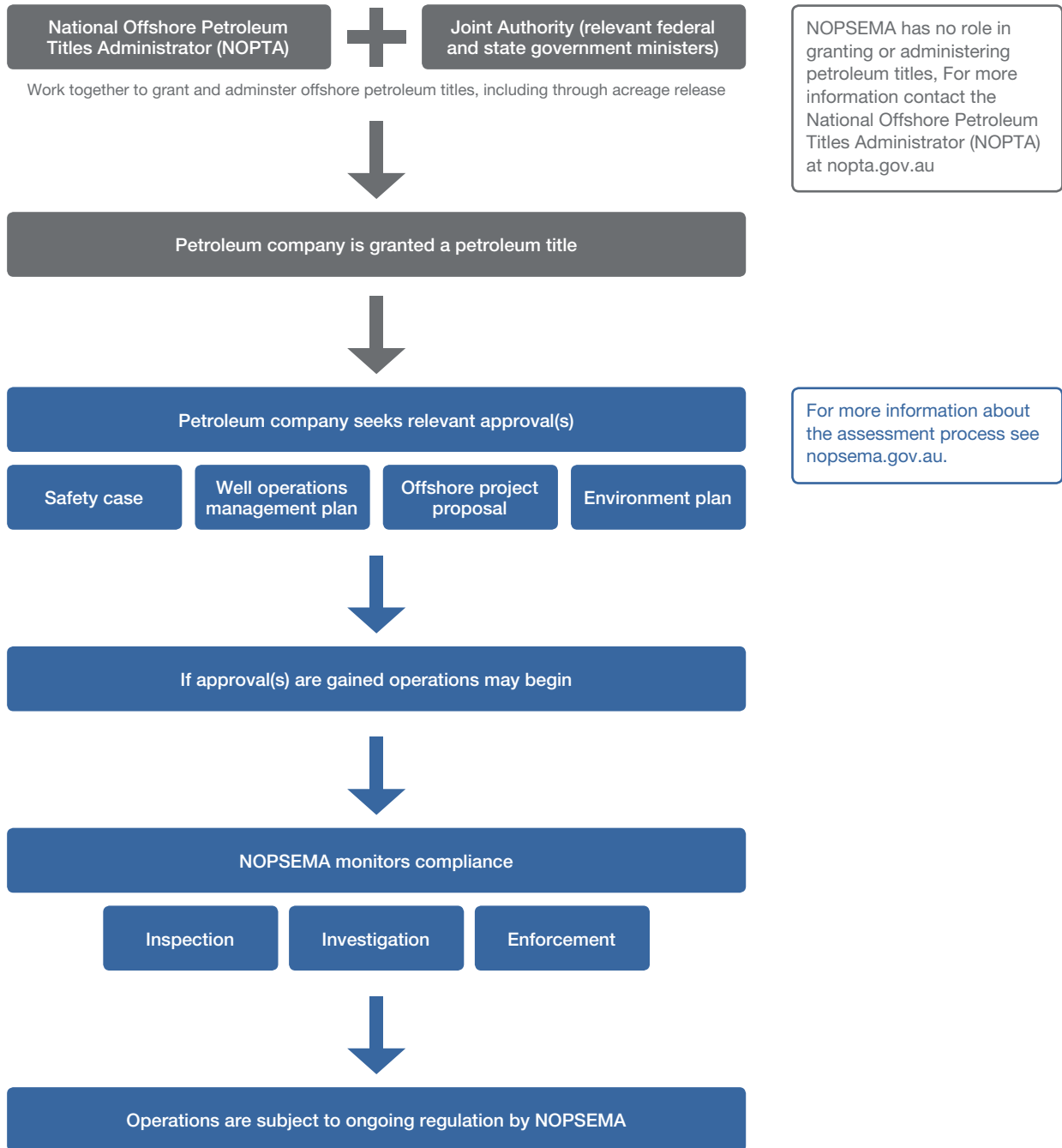
- the geological and operational objectives of drilling the well
- the location, water depth and intended well depth
- the known or predicted geology of the well(s), including reservoir characteristics, and any geotechnical hazards (e.g. faults and seismic anomalies)
- details about the well design and standards covering all aspects of the drilling, production, intervention, maintenance, suspension and abandonment activity relevant to the integrity of the well
- analysis of primary and secondary barriers proposed to safeguard the well
- the well management systems and design methodologies
- well construction and maintenance details (e.g. audit and management of change processes).

What level of protection does ALARP provide?

A level that is as low as reasonably practicable (ALARP) means that the duty holder has to demonstrate to NOPSEMA, through reasoned and supported arguments that there are no other practical measures that could have been undertaken to reduce risks further.

The offshore petroleum approval and regulatory process

The infographic below provides a broad overview of the approval and regulatory process for all offshore petroleum activities in Commonwealth waters.

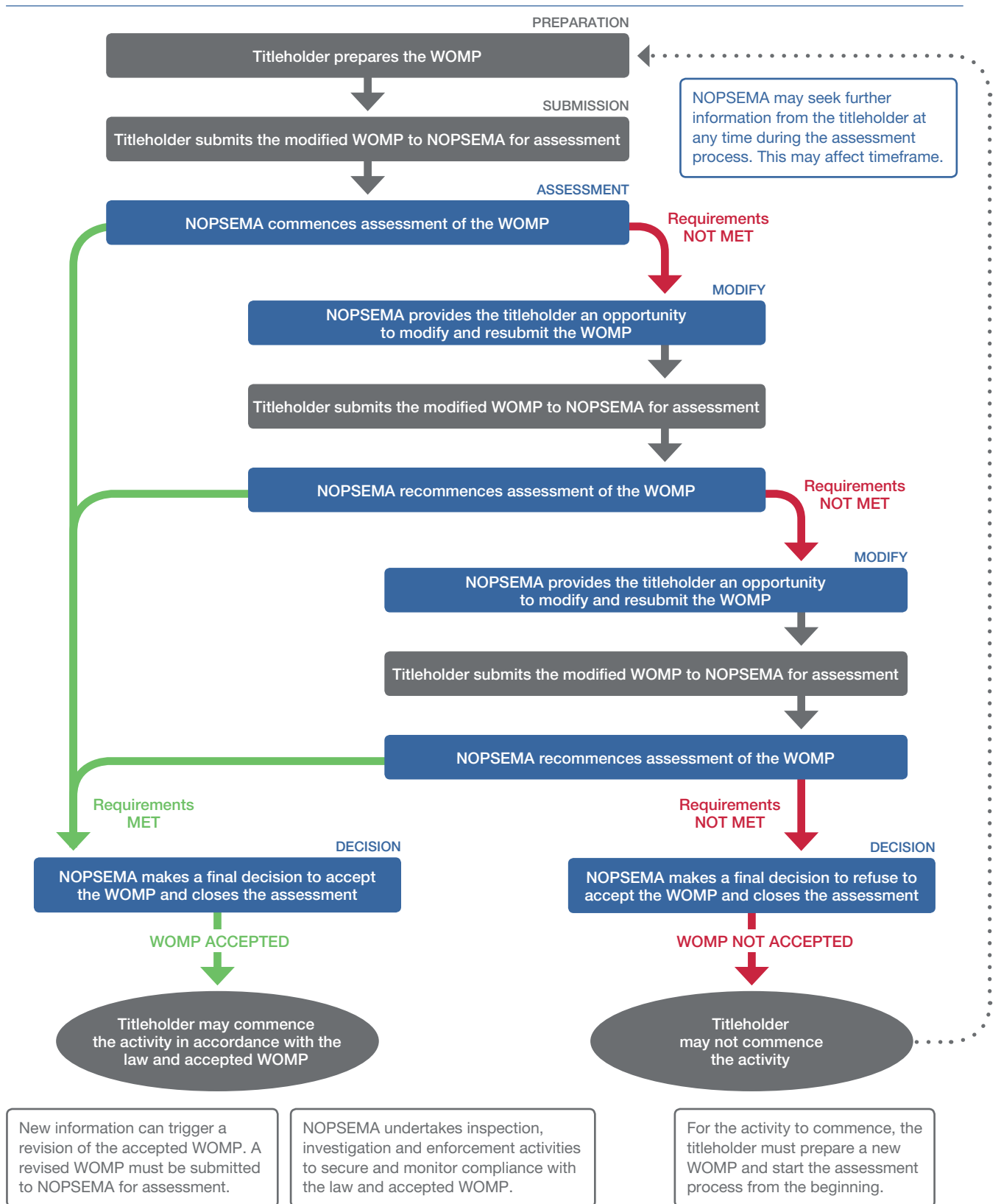


Legend

- NOPSEMA's remit
- Outside of NOPSEMA's remit

Assessment process for well operations management plans

The infographic below provides a broad overview of the well operations management plan (WOMP) assessment process. Plans are assessed against the requirements of the Offshore Petroleum Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011. Plans variable in their complexity and scope, as such assessment timeframes will vary.



Legend

- NOPSEMA
- Titleholder



NOPSEMA

Further information

NOPSEMA publishes guidance notes, guidelines and information papers at nopsema.gov.au.

The *Offshore Petroleum Greenhouse Gas Storage Act 2006* and subsidiary regulations are available in full at comlaw.com.au.

Legislative requirements not administered by NOPSEMA can be obtained from:

- The Department of Industry, Innovation and a Science at industry.gov.au
- State/Northern Territory department at directory.gov.au
- The National Offshore Petroleum Titles Administrator at nopta.gov.au.

Contact NOPSEMA

communications@nopsema.gov.au

Perth (Head Office)

Level 10, Alluvion
58 Mounts Bay Road
Perth WA 6000
Phone: + 61 (08) 6188 8700

Melbourne

Level 25
140 William Street
Melbourne VIC 3000
Phone: +61 (03) 8866 5700

