NOPSEMA
Australia's offshore energy regulator

GUIDANCE NOTE

Well operations management plan content and level of detail

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Core concepts

- The Well Operations Management Plan (WOMP) submitted by a titleholder to NOPSEMA must comply with the content requirement of Part 5 of the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2025 (RMA Regulations) and the corresponding laws of each state or territory where powers have been conferred upon NOPSEMA.
- This note provides guidance on the contents and level of detail expected to be included in a WOMP submitted to NOPSEMA for acceptance.
- The WOMP must be appropriate for the nature of the activities to be carried out in the title area.
- The WOMP must be a stand-alone document that is sufficient to meet the contents and level of detail requirements of the regulations without the need to access other documents external to the WOMP.
- Only by inclusion of a sufficient level of detail in the WOMP will NOPSEMA be able to decide on the appropriateness of the WOMP in accordance with the regulations.
- The WOMP must identify the technical and managerial aspects of managing the risk to integrity of the wells.
- The adopted well integrity control measures described in the WOMP for any identified risk must be shown to collectively eliminate the risk or reduce it to as low as reasonably practicable (ALARP).
- Overall, a well-structured, coherent WOMP will facilitate a titleholder's ability to demonstrate a clear understanding of the factors that influence risk and the controls that are critical to minimising risk to the integrity of the well(s).

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Abbreviations/acronyms

ALARP	As Low as Reasonably Practicable
MoC	Management of Change
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
OPGGS Act	*Offshore Petroleum and Greenhouse Gas Storage Act 2006*
RMA Regulations	Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2025
WOMP	Well Operations Management Plan

Key definitions

In-force	A WOMP is in force if it has been accepted by NOPSEMA under Division 3; and acceptance of the plan has not been withdrawn by NOPSEMA under Division 5; and has not ceased to be in force under 73(2).
Integrity	In relation to a well; means the capacity of the well to contain petroleum, a greenhouse gas substance, or any other substance (RMA Regulations section 6)
Regulator	NOPSEMA – for a petroleum exploration permit, petroleum retention lease, petroleum production licence, infrastructure licence, greenhouse gas assessment permit, greenhouse gas holding lease or greenhouse gas injection license (RMA Regulations section 71)
Regulations	Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2025

Following are some useful definitions (*The Macquarie Dictionary Online* © 2007) for verbs and nouns used in the regulations. They are a suggested starting point only and are not a legal interpretation.

Adequate:	equal to the requirement or occasion; fully sufficient, suitable or fit.
Appropriate:	suitable or fitting for a particular purpose, person, occasion, etc.
Comprehensive:	inclusive; comprehending much; of large scope.
Consider:	to make allowance for; to regard with consideration or respect.
Demonstration:	to describe and explain with the help of specimens; to manifest or exhibit.
Describe:	to set forth in written or spoken words; give an account of.
Detail:	particulars collectively; minutiae; item by item.
Evidence:	grounds for belief: that which tends to prove or disprove something; proof.
Identify:	to recognise or establish as being a particular person or thing.
Include:	to contain, embrace, or comprise, as a whole does parts or any part or element; to contain as a subordinate element; involve as a factor.
Integrated:	to make up or complete as a whole, as parts do.
Provide for:	to make arrangements for supplying means of.
Specify:	to mention or name specifically or definitely; state in detail.
Summary:	a brief and comprehensive presentation of facts or statements; an abstract, compendium, or epitome.
Systematic:	having, showing, or involving a system, method, or plan.

1. Introduction

1.1. Intent and purpose

This document provides guidance on the preparation of a WOMP for a well(s) as required under Part 5 of the Commonwealth RMA Regulations and the corresponding laws of each state or territory where powers have been conferred upon NOPSEMA.

This guidance note is part of a suite, available on the NOPSEMA website, providing guidance on a range of aspects of the regulations. The purpose of the guidance is to explain the individual objectives of the regulations, identify issues to be considered and provide practical examples to illustrate the concepts and potential approaches to meet the requirements of the regulations. The guidance is intended for use by industry and NOPSEMA Well Integrity Specialists in the preparation and assessment of WOMPs respectively.

Guidance notes indicate what is required by the regulations, discuss good practice and suggest possible approaches. A regulatory requirement is indicated by the word **must**, while other cases are indicated by the words should, may, etc. NOPSEMA acknowledges what is good practice, and what approaches are valid and viable, will vary according to the nature of the petroleum title areas and the well(s).

This guidance note in particular, *WOMP contents and level of detail*, provides guidance on the contents and level of detail expected to be included in relation to each of the major aspects of a WOMP submission (e.g. management system description, well activity description, risk assessment) such that it complies with the requirements of the regulations and provides evidence that risks are reduced to a level that is ALARP. It is not intended to provide detailed formulaic solutions; rather the aim is to provide a common basis for the preparation and assessment of WOMPs.

Titleholders seeking further clarification regarding WOMP contents requirements may contact NOPSEMA.

This guidance note is not a substitute for legal advice on interpretation of the regulations, nor the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) under which the regulations have been made.

1.2. Summary of legislative requirements

Summary tables of the legislative requirements are included as a quick reference throughout this document. However, the reader is encouraged to work directly from the regulations themselves.

With respect to WOMP contents aspects of this guidance note, the relevant regulations are Sections 81 and 82.

The acceptance criteria described in section 81 for new and revised WOMPs should specify the requirements for a WOMP to be appropriate to the well and for the activities conducted in the title area.

The level of detail required in a WOMP to satisfy NOPSEMA that the plan is appropriate to the well and the activities conducted on the well, is a function of several factors such as the level of risk, complexity and uncertainty.

Given the overarching nature of the appropriateness requirements, a titleholder should apply this test to all the contents requirements as the plan is being developed, e.g. with respect to section 82(3) to (10):

"Have I included sufficient detail in the description of the well, and the well activities relating to the well to which the plan applies?"

2. General considerations

2.1. Stand-alone document

The WOMP must be a stand-alone document that is sufficient to meet the contents and level of detail requirements of the regulations without need for NOPSEMA to access other documents external to the WOMP. There may be descriptions of other documents in the WOMP, but they must be described in sufficient detail within the WOMP to meet the specific regulatory requirement. However, reference documents themselves should generally not be submitted as part of the WOMP and hence do not become part of the WOMP in force; only the descriptions of the source documents become part of the WOMP in force.

During a WOMP assessment, a request for further written information may be requested by NOPSEMA regarding the description of a reference document.

To supply descriptions of elements in the WOMP, as opposed to copies of source documents themselves, the description of an element should:

- distil the points of value, the relevant features of the element
- outline the reasoning or the background thinking to the development of the element
- explain how it is connected to, or supports, other elements.

In relation to supporting studies, the WOMP should summarise the key findings and explain their significance. Assumptions should also be specifically noted to provide an understanding of the limitations that apply.

In the case of well management system procedures, the summary should be such that the WOMP describes the essential elements of how these documented systems contribute to the management of well integrity. As with any formal document relying on other material, the WOMP should employ a robust referencing system that is applied both internally and externally to the document.

For complex subjects that need to be described in the WOMP (e.g. well abandonment), titleholders should consider providing examples to help explain the issues.

2.2. Common weakness

There are two types of recurring issues that have been noted with respect to contents and level of detail in previous WOMP submissions:

2.2.1. Insufficient detail

Simply listing elements or referencing documents will generally not provide a sufficient level of detail. Examples of this include:

- details in relation to well abandonment being limited to a reference to an internal guideline or policy

- reference to a blowout contingency plan without providing a summary description
- reference to titleholder's Barrier Standard without providing a summary of barrier philosophy and standards
- reference to a competency system without outlining job titles and responsibilities.

2.2.2. Too much detail

Submitting copies of complete reference documents within the WOMP may not necessarily provide evidence that it complies with the regulatory requirements of the regulations. Common examples of this are the inclusion of:

- a complete well abandonment and suspension guideline containing multiple options without specifying the circumstances in which each option might be used
- a complete copy of a titleholder – drilling contractor well control interface document.

2.3. WOMP structure

The WOMP should have a coherent, integrated overall structure. There should be logical flow to the process that outlines measures to control the risks and the performance required from specific measures to maintain well integrity risk levels to ALARP and an acceptable level.

It is recommended that ISO 16530-1 *Petroleum and natural gas industries – Well integrity– Part 1: Life cycle governance* be used as a guide to structure the WOMP and segregate the well life cycle into phases: basis of design, well design, construction, operations, intervention, and abandonment.

Common elements can be used to describe a titleholder's general well integrity management system and once accepted, can be used in future WOMPs. Common elements integral to the life cycle management of well integrity can be described once and re-used thereafter. This may include methods and processes which apply to multiple well life cycle phases. An example of a common element would be a description of the risk management process.

The life cycle phase sections should contain project, campaign or well specific information pertaining directly to the defined WOMP scope activities. This approach can be considered for all WOMP types. For example, a producing phase WOMP will focus on the operations life cycle section. However, information related to well design, construction, intervention and abandonment will also be required to ensure all risks are identified, and appropriate safeguards clearly defined.

Titleholders are encouraged to demonstrate alignment with the ISO 16530-1 structure convention to assist with the WOMP assessment process. Separating the plan into standardised life cycle phases will also facilitate the assessment of other forms of WOMP submissions such as 5-year and in part revisions. One exception is the requirement to describe measures and arrangements used to regain control of a well if there is a loss of integrity. This is outside the scope of ISO 16530-1. Therefore, it is recommended to include the appropriate engineering and technical suitability of the well design and integrity to enable source control measures in a separate section titled Source Control and Emergency Response Plans, refer to Section 3.7 below.

The use of good editorial practice is essential; duplication of information (and the potential for contradiction) can be avoided by using effective internal cross-referencing within the WOMP document itself.

3. Matters that must be included in a WOMP

3.1. Description of the well and well activities (Section 82(3))

Sec 82(3) A description of the well, and the well activities relating to the well, to which the plan applies

(a) a description of the well, and the well activities relating to the well, covered by the plan; and

(b) a timetable for carrying out and completing the well activities.

3.1.1. Well Description

A comprehensive description of the well and the activities to be covered in the WOMP is essential to set out the scope of the plan.

For example: Introduction, description of wells, lifecycle process, and description of activities. Tabulate areas covered by document: drilling, suspension, abandonment, production, workover, intervention etc.

Provide a list of abbreviations, terms and definitions that define jargon and a concordance table clearly indicating which section(s) of the WOMP address each requirement of the regulations.

Specify the title area(s) and well name(s) covered by the document, including outlined details of well type, location and purpose of the well(s) and provide a map of the area / location.

Provide a brief description of well activities that will be addressed by the plan (e.g. drilling, completion, workover, intervention, production, injection, suspension or abandonment). Include the information necessary to understand the activity, such as:

- well objectives
- locations and water depths
- programmed depths
- description of any materials and equipment to be used in undertaking the well activity.

Existing wells require a description that is sufficiently detailed to assess the current well integrity status. This can be provided most succinctly, but not exclusively, in the form of a well barrier diagram.

3.1.2. Timetable

For new wells or operational wells this regulation is self-explanatory. For WOMPs that include suspended wells, an approximate timeframe until re-entry or permanent abandonment should be provided.

3.2. Well Integrity risk management process

3.2.1. Management system

Sec 82(4) A well operations management plan must include:

(a) a description of the management system used to:

(i) identify and assess risks to the integrity of the well; and

(ii) ensure the effectiveness of the proposed control measures that will be in place to ensure that risks to the integrity of the well will be reduced to as low as reasonably practicable throughout the life of the well

Titleholders must apply appropriate risk analysis techniques (e.g. AS/NZS ISO 31000:2018). The methodologies employed should be described in the WOMP.

It is important to identify all risks having the potential to cause a loss of well integrity so that the well integrity standards, control measures and performance standards can be adequately assessed.

A WOMP must also include a description of the management system components that will be used to ensure that control measures are effective throughout the life of the well. For example:

- management of change processes
- organisational learning processes regarding well management
- monitoring, auditing and assurance.

3.2.2. Concept Select

Sec 82(4) A well operations management plan must include:

(b) a description and explanation of the concepts considered in relation to the well and how the concept selected for progression will reduce risks to the integrity of the well to as low as reasonably practicable and an acceptable level

Concept Select sits between feasibility and design in the ISO 16530-1 well life cycle and is the stage where the well concept is selected based on integrity, risk, and life cycle viability, prior to detailed design. The outcome of the Concept Select (or equivalent) phase should demonstrate that the key risks associated with the selected concept have been identified and assessed, and that the concept provides a feasible basis for reducing those risks to ALARP and acceptable levels through subsequent design and operational controls. The level of detail included in a WOMP to address this requirement will be commensurate with the level of risk associated with the well(s) at the relevant stage of the life cycle.

The WOMP should reflect the current life cycle stage of the well(s) and be updated as the well progresses through the lifecycle or when WOMP revisions are made. For Operational WOMPs where the well(s) have already been constructed, the operational management of the well should be described in accordance with regulation 82(5)(c).

As a well progresses through the life cycle, concept select information in the WOMP should continue to reflect the applicable life cycle stage. Where WOMP revisions are submitted, including for changes to operations, changes that may affect well integrity, or entry into plug and abandonment (P&A), the WOMP should include concept select information demonstrating that the well concept has been appropriately re-evaluated and remains suitable for managing well integrity risks to ALARP and acceptable levels.

3.2.3. Design, construction, operations and management of wells

Sec 82(4) A well operations management plan must include:

(c) a description and explanation of the design, construction, operation and management of the well, and conduct of well activities, showing how risks to the integrity of the well will be reduced to as low as reasonably practicable and an acceptable level.

This regulation entails a summary of the well management system, the well life cycle integrity philosophy and a detailed risk assessment showing how these risks are reduced to as low as reasonably practicable and an acceptable level. The contents and level of detail must be sufficient for NOPSEMA to assess the well management system to be applied by the titleholder.

The description should link to the standards and acceptance criteria described in 3.4 below.

3.3. Well integrity standards, control measures, performance standards and acceptance criteria

Sec 82(5) A well operations management plan must include the following matters:

(a) a description of the well integrity standards against which the performance of the titleholder in maintaining the integrity of the well is to be measured;

(b) a description of the control measures that will be in place to ensure that risks to the integrity of the well will be reduced to as low as reasonably practicable throughout the life of the well, including periods when the well is not operational but has not been permanently abandoned;

(c) a description of the performance standards for the control measures mentioned in paragraph (b);

(d) the acceptance criteria that will be used to determine whether the following are being met and maintained:

(i) the well integrity standards mentioned in paragraph (a);

(ii) the performance standards mentioned in paragraph (c).

The WOMP must include a description of the well integrity standards, control measures, performance standards and acceptance criteria that function as the risk control and performance requirements that deliver ALARP levels of well integrity risks. The intent of this content is to ensure that WOMPs contain the

framework that deliver monitoring, measurement and management of well integrity performance across the full life cycle of the well.

To assist titleholders with aligning contents in WOMPs with section 82(5) contents requirements, the following guidance is provided:

2016 Regulations - 5.09(1)	**2025 Regulations – 82(5)**
(d) a description of the performance outcomes	(a) a description of the well integrity standards
(e) a description of the control measures	(b) a description of the control measures
(f) a description of the performance standards	(c) a description of the performance standards
(g) the measurement criteria that will be used	(d) the acceptance criteria

For example:

Well Outcome:	Confirmation that casing is appropriate to use as a barrier
Control Measure:	Pressure test casing
Performance Standard:	Drilling barrier and qualification
Acceptance Criteria:	Pressure test according to standard
Verification/Evidence:	Pressure test chart signed by qualified person

This example has been beneficial when used with the Final Abandonment Report to demonstrate that the well has been abandoned in compliance with the WOMP.

3.4. Monitoring, auditing and assurance processes

Sec 82(6) A well operations management plan must include a description of the monitoring, audit and well integrity assurance processes that will be implemented to ensure the well integrity standards mentioned in paragraph (5)(a) are being met throughout the life of the well, including periods when the well is not operational but has not been permanently abandoned

Describe the well management systems review and audit requirements for the different phases of the well.

3.5. Responsibilities of employees and contractors

Sec 82(7) A well operations management plan must include:

(a) a description of the roles and responsibilities of employees, contractors and service providers in relation to the integrity of the well; and

(b) a description of the measures that will be used to ensure that employees, contractors and service providers carrying out well activities:

(i) are aware of their responsibilities in relation to the maintenance of the integrity of the well; and

(ii) have appropriate competencies and training.

The requirement under section 82(7) applies to personnel who plan, approve or execute well activities at any stage of a well's life cycle. The WOMP should include a clear and concise description of the roles and responsibilities of employees, contractors and service providers in relation to maintaining well integrity, appropriate to the relevant phases of the well life cycle. This includes concept, design, construction, operation and decommissioning of the well.

Competency management applies to personnel involved across the well life cycle. Titleholders are also responsible for ensuring that contractors have fit-for-purpose competency frameworks in place, supported by appropriate titleholder oversight.

Individual verification of every person is not required; competency may be demonstrated through effective, framework-based assurance systems and contract management processes. Further information is provided in N-06300-IP1038 *Human Factors Information Paper - Competency Assurance.*

A risk-based approach should be used to determine the depth of competency verification, increased regulatory scrutiny is likely where elevated risk, adverse performance indicators, or declining control effectiveness indicate potential weaknesses in competency arrangements.

3.6. Matters related to surrender of title

Sec 82(8) A well operations management plan must include a description of the processes and arrangements that the titleholder will follow if the title is surrendered to ensure:

(a) if the titleholder is a petroleum exploration permittee, a petroleum retention lessee, a petroleum production licensee or an infrastructure licensee—that the titleholder will, to the satisfaction of NOPSEMA:

(i) plug or close off the well; and

(ii) provide for the conservation and protection of the natural resources in the strata intersected by the well; or

(b) if the titleholder is a greenhouse gas assessment permittee, a greenhouse gas holding lessee or a greenhouse gas injection licensee—that the titleholder will, to the satisfaction of the responsible Commonwealth Minister:

(i) plug or close off the well; and

(ii) provide for the conservation and protection of the natural resources in the strata intersected by the well.

The requirement under section 82(8) is for an explanation of how the processes described in 82(4)(a) and (c) with the control measures, performance standards described in 82(5) will meet the requirements of Section 270 of the OPGGS Act. The document *Section 270 Consent to surrender title - NOPSEMA advice* N-00500-PL1959 gives more detail on the requirements.

3.7. Suspension and permanent abandonment

Sec 82(9) A well operations management plan must include a description of the arrangements that will be in place for suspension and permanent abandonment of the well, showing the following:

(a) how, during the process of suspending or abandoning the well, risks to the integrity of the well will be reduced to as low as reasonably practicable;

(b) how the actions taken during that process will ensure that the integrity of the well is maintained while the well is suspended or abandoned;

(c) if the titleholder is a petroleum exploration permittee, a petroleum retention lessee or an infrastructure licensee - how the titleholder will, in the process of suspending or abandoning the well:

(i) comply with the applicable requirements under subsection 569(1) of the Act (about work practices) to which the titleholder is subject; and

(ii) satisfy paragraphs 270(3)(d), (e) and (f) of the Act (about consent to surrender a title);

(d) if the titleholder is a petroleum production licensee—how the titleholder will, in the process of suspending or abandoning the well:

(i) comply with the applicable requirements under subsections 569(1) and 570(1) of the Act (about work practices) to which the titleholder is subject; and

A well should not remain suspended indefinitely (as stated in ISO 16530). NORSOK D-010 provides guidance on maximum durations for wells to be in a suspended state - a maximum of three years for a well status defined as 'temporarily abandoned without monitoring', with a maximum of one year between visual observations of subsea wells.

The titleholder must provide details of the processes and procedures and reference the standards defined in 82(5) that will be used to ensure that the well abandonment is carried out such that it meets the requirements of Section 270 and 569 or 570 of the OPGGS Act. The document *Section 270 Consent to surrender title - NOPSEMA advice* N-00500-PL1959 gives more detail on the requirements.

3.8. Measures and arrangements that will be used if there is a loss of well integrity

Sec 82(10) A well operations management plan must include a description of the measures and arrangements that will be used to regain control of the well if there is a loss of integrity

Provide a description of the blowout contingency and source control planning covering drilling, well, production and injection activities for each well, installation, field or area demonstrating that the plan to

regain control after a loss of well integrity is fit for purpose, based on a realistically modelled case and will be available prior to commencing the well activity.

Consideration should be given to the latest versions of internationally accepted guidelines and standards such as:

- Oil & Gas UK – Guidelines on Relief Well Planning
- NORSOK Standard D-010 - Well integrity in drilling and well operations
- International Association of Oil & Gas Producers - Capping & Containment, Global Industry Response Group recommendations - Report No. 464.

The summary of the blowout contingency plan should as a minimum address:

- modelling assumptions and scenarios
- primary kill strategy
- relief well design.

Typically, the blowout scenarios described for penetrated reservoirs should address credible pipe, casing and open hole configurations, expected reservoir parameters including productivity, zero mechanical skin factors or flow path restrictions.

The description should clearly address the number of relief wells required to kill the blowout well, pre-planned identification of relief well locations, shallow gas assessment, well paths, equipment logistics and specialist service provider arrangements. If more than one relief well is required, it shall describe how such an operation is feasible with respect to logistics, weather criteria and availability of rigs. The description should also address the feasibility of mobilisation and installation of capping equipment within a reasonable timeframe.

Plan for capping and containment of a blowing subsea well:

A description of any plan for capping of a blowing subsea well should address:

- evaluation of the feasibility of capping a blowout scenario at the given water depth
- identification of all connections and possible interfaces from wellhead to flexible joint
- identification of all connections and possible interfaces from XT to interface to workover equipment
- inclusion of an overview of equipment requirements and availability to allow installation of a capping stack, including an adapter to enable connection of the capping stack
- consideration of additional well load cases resulting from a capping operation.

4. References, acknowledgements and notes

Offshore Petroleum and Greenhouse Gas Storage Act 2006

Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2025

API Bulletin 97 - Well Construction Interface Document Guidelines

AS/NZS ISO 31000:2018 - Risk Management Guidelines

International Association of Oil & Gas Producers - Capping and Containment Global Industry Response Group recommendations, IOGP Report No. 464

ISO 16530-1:2017 Petroleum and natural gas industries — Well integrity — Part 1: Lifecycle governance

N-06300-IP1038 Human Factors Information Paper - Competency Assurance

NORSOK Standard D-010 – Well Integrity in drilling and well operations

Oil & Gas UK - Guidelines on Relief Well Planning for Offshore Wells

Oil & Gas UK – Guidelines on qualification of materials for the abandonment of wells

Oil & Gas UK – Guidelines on Relief Well Planning

Oil & Gas UK – Well Lifecycle Integrity Guidelines

Oil & Gas UK – Well Decommissioning Guidelines

Note: All regulatory references contained within this guidance note are from the OPGGS Act and the associated regulations. For titles located in designated coastal waters, please refer to the relevant State or Northern Territory legislation.

For more information regarding this guidance note, please contact NOPSEMA on:

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