NOPSEMA
Australia's offshore energy regulator

INFORMATION PAPER

Staged WOMP Submission Process

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From the middle of 2024 NOPSEMA developed a suggested submission process and structure for the Well Operation Management Plans (WOMPs), ensuring a robust and efficient process is in place to meet the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2025 (RMA Regulations) across the full lifecycle of a well. Should the titleholder prefer, they may still submit the WOMP using their existing structure.

The revised process provides several key benefits:

- improving the process to demonstrate that risks have been considered across the whole lifecycle, from conceptual design through to abandonment
- a significant reduction in regulatory burden, by enabling submission of the titleholder's own technical detail, rather than a distilled version produced solely for the regulator
- implementing a structure to enable submission of an overarching Well Integrity Lifecycle Management Processes (WLMP), separate from the technical well detail. This ensures the management process is kept evergreen across all the titleholder's WOMPs.

The revised process provides a streamlined way for titleholders to submit the outputs of their approved WLMP as a way of demonstrating that the requirements of the RMA Regulations have been satisfied.

By enabling an early, partial submission of the WOMP containing key information on the proposed well design and associated risks, it enables titleholders to provide consistency regarding the well operations across the three permissioning documents, Environmental Plan, Safety Case and WOMP.

The focus of the regulator's assessment remains unchanged. NOPSEMA will assess the titleholders' WOMP submissions in accordance with the RMA Regulations, specifically Section 81 criteria for acceptance of a WOMP.

Phasing of Regulatory Submissions

The preferred method to demonstrate that the risks to well integrity are being reduced to as low as reasonably practicable (ALARP) and an acceptable level across the full lifecycle is via a phased submission of the WOMP, as described below. Further detail on each phase is within the following sections.

1. **Titleholder's Well Integrity Lifecycle Management Process (WLMP)**

This is to be provided once, kept up to date, and is to be referenced in all future submissions.

The submission is to provide a description of the overarching process that titleholders use to manage well integrity across the full lifecycle. This submission will provide the roadmap by which titleholders may provide the well specific technical detail in the construction, production, and abandonment WOMPs.

2. **Construction (or major intervention) WOMP**

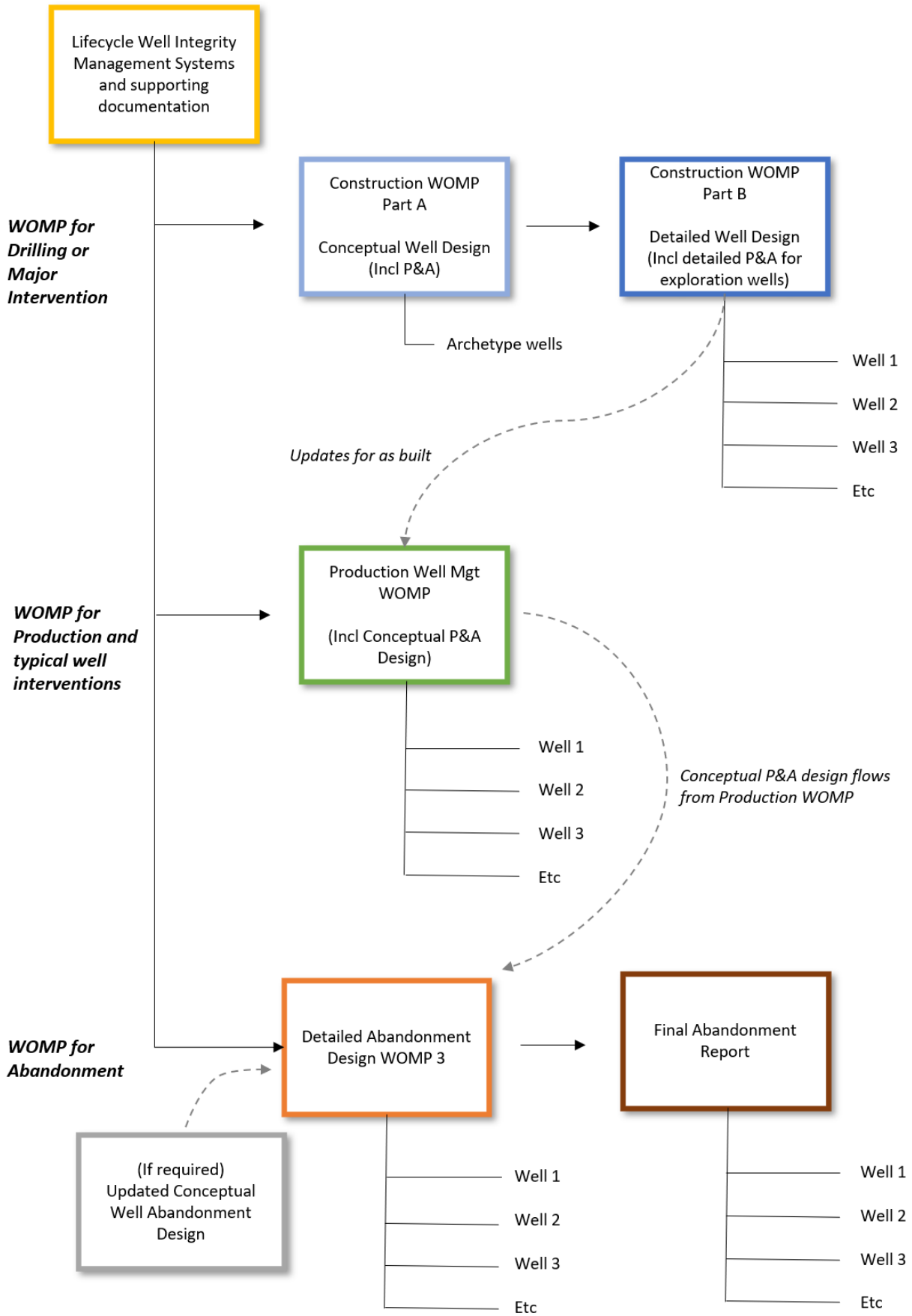
    a. **Part A** – Outcome of the concept select (or equivalent) phase as described in the WLMP. This must demonstrate that risks associated with the chosen concept have been identified, and that those risks can be reduced to ALARP and an acceptable level. Part A is also the mechanism to demonstrate that if the WOMP applies to more than one well, that the risks to the integrity of each well are similar.

    b. **Part B** – Outcome of the detailed well design phase for the titleholder's WLMP. The submission must demonstrate the effectiveness of the proposed control measures and the assurance conducted on the deliverables of their Well Delivery Process. Part B for Exploration Wells must also cover the full abandonment detail. Part B is also the mechanism to demonstrate that if the WOMP applies to more than one well, that the kinds of monitoring processes and control measures that will be implemented for each well are similar.

    NOTE: Whilst Part A and B may be submitted at the same time, NOPSEMA has a strong preference for Part A to be submitted as soon as the titleholders concept select gate (or equivalent) has been passed. A combined submission that fails to demonstrate that risks were identified and mitigated at the concept select phase, and have resulted in a well design with higher residual risk or less effective control measures may result in the WOMP being rejected on the basis of not having satisfied Section 82(4)*(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."*

3. **Production Well Management WOMP** including the production operations, routine well interventions and conceptual abandonment design.

4. **Abandonment WOMP** including the basis for permanent isolation of all zones capable of flow, and the protection of natural resources**.** The well ends, and can be removed from the WOMP, when NOPSEMA is reasonably satisfied that the well has been plugged and abandoned (P&A) in accordance with the Abandonment WOMP. Following permanent abandonment, the end state/recovery of the wellhead is managed via the Environment plan and Safety Case.


Lifecycle Well Integrity Management Systems and supporting documentation
WOMP for Drilling or Major Intervention
Construction WOMP Part A
Conceptual Well Design (Incl P&A)
Archetype wells
Construction WOMP Part B
Detailed Well Design (Incl detailed P&A for exploration wells)
Well 1
Well 2
Well 3
Etc
Updates for as built
WOMP for Production and typical well interventions
Production Well Mgt WOMP
(Incl Conceptual P&A Design)
Well 1
Well 2
Well 3
Etc
Conceptual P&A design flows from Production WOMP
WOMP for Abandonment
Detailed Abandonment Design WOMP 3
Final Abandonment Report
(If required) Updated Conceptual Well Abandonment Design
Well 1
Well 2
Well 3
Etc
Well 1
Well 2
Well 3
Etc

1. Titleholders Well-Integrity Lifecycle Management Processes

This should describe the management systems that the titleholder uses to assure integrity of the well throughout the design, construction, operation, and decommissioning. NOPSEMA recognises that this system may be called by different names, but in essence, should be a roadmap of the systems used for the well design and well integrity assurance across the full lifecycle of a well.

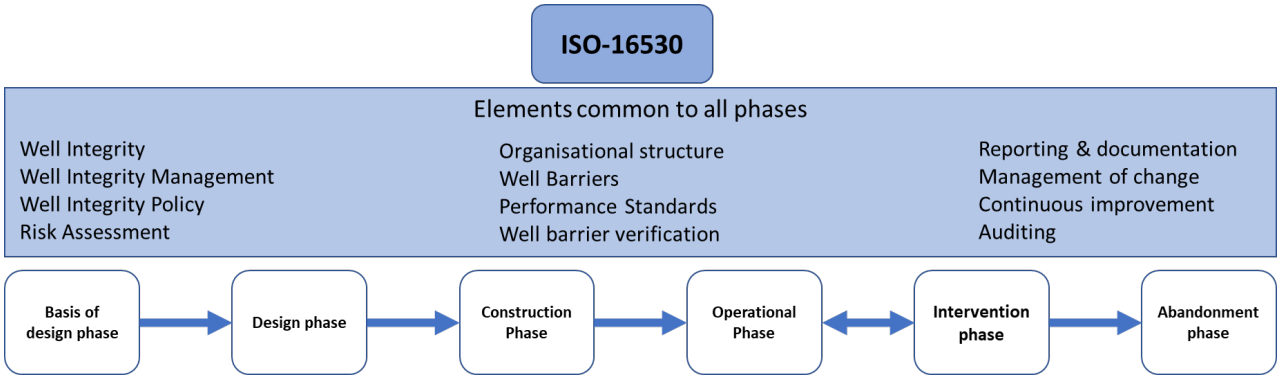
The WLMP should be common across all WOMPS submitted by a titleholder.

NOPSEMA prefers the titleholder's own documents to be provided, rather than an edited or distilled version. Expected content is to include, by not limited to:

a. The deliverables required at each phase of the Well Lifecycle Management Process
b. Risk Management Procedure (e.g. Risk Identification and Risk Reduction Process)
c. Management of Change Process, covering both technical and operation aspects of well design and construction
d. Well Integrity Standards & Procedures, including the well barrier philosophy
e. Well Integrity management process for production wells
f. Decommissioning Standards
g. Well barrier verification process
h. Well Integrity audit systems, including reporting & documentation requirements
i. Organisational Structure for decisions on well integrity across Projects, Drilling and Completions, Production Assets, and Decommissioning
j. Titleholders Well Integrity Competency Management System, including approval matrix
k. Competency Management System for third-party contractors and service providers
l. Continuous Improvement Process.

NOPSEMA will assess this as an independent submission. NOPSEMA advises titleholders to submit their WLMP as early as practicable, to ensure the assessment does not become critical path for well activities.

NOPSEMA will benchmark the titleholder's WLMP against the "elements common to all phases" as described in ISO-16530.



Once the titleholder's WLMP is accepted, all future WOMP submissions may reference the accepted WLMP document number and revision.

After the WLMP has been accepted, if the titleholder makes a significant change to any of the systems or processes described in the document, the titleholder will be required to submit a revision, including their internal Management of Change. Examples of significant changes are, but not limited to:

- Well Integrity Standards
- competency requirements
- Signatory / Authority levels for Management of Change (MoC) or Derogation of Standards
- changes to the well integrity verification process
- changes to annual well integrity audit process.

At appropriate time intervals, NOPSEMA will conduct inspections on any WOMPs in force to insure WLMP content has been kept up to date.

1.1. Levies

There is no Levy for the assessment of the WLMP.

Levies will be charged at submission of:

- Part 1A Drilling / Major Intervention WOMP
- Part 2 Production WOMP (if applicable)
- Part 2 Abandonment WOMP (if applicable).

2. Well Construction WOMP

2.1. Part A – Basis of Design

The purpose of Part A of the Construction WOMP is to demonstrate that a robust process has been undertaken to identify the risks to well integrity and these have been captured in a risk register which will be maintained throughout the well lifecycle. ISO 16530 gives additional information regarding Risk Registers.

The submission of Part A will be dependent on the titleholder's management system; the titleholder will describe the phase in their process that is equivalent of the ISO-16530 Design phase as part of their WLMP submission.

It should demonstrate that the basics as described in ISO-16530 have been addressed.

The submission must:

- include a detailed timeline for outputs for the Well Design Phase
- provide sections of the Concept Select Report pertinent to well integrity, demonstrating that the chosen concept is likely to result in a well design that has similar or lower levels of risk than alternative concepts
- demonstrate that the well design and well integrity assurance process has been followed by providing a tabulated output of the process deliverables for the Concept Select Phase as described in the accepted

Lifecycle Well Integrity Management System. This must include Document Titles, Document Numbers, and who has provided assurance on each deliverable

- include the appropriate management of change for any deliverables described in the process that have been excluded or altered
- identify any deviations to the titleholder or international standards associated with the preferred concept.

During the assessment NOPSEMA may request specific documents from the Concept Select deliverables of Part A as a request for further written information (RFFWI). These will typically be related to areas that NOPSEMA considers higher risk or that will involve the application of complex control measures.

2.2. Part B - Output of Well Design phase

The purpose of Part B is to demonstrate that the identified risks to well integrity have appropriate control measures to reduce the risk to ALARP and an acceptable level across the well lifecycle.

Part B should be submitted after the project has passed the titleholder's approval gate for the detailed design (equivalent of the Design phase in ISO 16530).

The submission must describe the updated project plan, a synopsis of the detailed well design, including the basis for the well construction phasing. The submission must include the pore pressure fracture gradient information, casing points, kick tolerance and the updated well specific well integrity risk register. The submission should also provide the Well Acceptance Criteria (WAC)[1] for each element of the well barrier envelopes.

The submission must demonstrate that the well design and well integrity process has been followed by providing a tabulated output of the deliverables for the detailed design of each well described in the WOMP. This must include the Document Titles, Document Numbers and who has provided assurance on each deliverable.

The submission must include the appropriate management of change for any deliverables described in the Process that have been excluded or altered.

Note: *It is recognised that there may be changes driven by operational constraints or new information after Part B of the WOMP has been submitted. Provided the change does not involve a derogation of the titleholder's standards, or provide a material change in risk to the well, this may be handled by the titleholder's Management of Change process. If the change results in a derogation of the titleholder's standards the titleholder must inform NOPSEMA.*

During the assessment of Part B, NOPSEMA will request specific documents as a RFFWI. These will typically be related to areas that NOPSEMA considers higher risk or involves application of complex control measures.

The submission must also describe the bridging documents to the major contractors and the well control procedures.

[1] WAC should at a minimum document the performance standard, the verification task, and the approving authority. It is a key method of communicating the requirements of the barrier verification activity to the wellsite.

2.2.1. Pre-spud inspection

Information contained in Parts A & B will be used to inform part of the scope of the Pre-Spud Inspection ensuring that key operational documents have been generated and that they adequately address the risks identified. The focus of the Pre-Spud inspection is to ensure that risk identified, and the associate control measures (including appropriate verification) will be effectively communicated to operational staff and contractors with roles in maintaining well integrity.

2.2.2. Compliance inspection

Once the rig has spudded the well a Compliance Inspection will run for the duration of the operation. This inspection uses the Daily Drilling Reports to confirm that the WACs have been met, and that any operational changes are managed via the appropriate Management of Change process.

3. WOMP for Production Well Management

ISO 16530 Sections 9 Well Operational Phase and 10 Well Intervention phase give a high level of detail on the sort of information that should be addressed.

The production WOMP should articulate the outcomes of well construction, and include details of any areas when operational complexity, or degradation of well barrier elements have resulted in a lower performance standard being employed.

The production WOMP must describe:

- as built condition with associated verification
- MOCs or degraded performance standards including justification for timeline to reinstate appropriate verification tasks and performance standards
- operating envelopes, including but not limited to MAASP, MAWOP, well monitoring and how alarms have been implemented to ensure that failure of a well barrier element is detected in an appropriate timeframe
- maintenance and verification tasks related to maintaining well barrier elements across the lifecycle
- the system by which well integrity results are stored and reported (e.g. Well Integrity Management Systems)
- details of well intervention(s) for planned maintenance and optimisation activities. Titleholders may choose to cover unplanned interventions, or well interventions of greater complexity/lower frequency through a revision in part or standalone WOMP. This will need to be agreed with NOPSEMA at the time, and will depend on the complexity of the activity, and synergies with control measures described in the existing Production or Construction WOMP for a campaign
- any areas that are not compliant with S572 of the Act (Maintain in good condition and repair). See NOPSEMA Policy “N-00500-PL1903 - S572 Maintenance and Removal of property”
- the process for annual well integrity audit(s), including demonstration of awareness of degraded performance standards at an Asset Management level and above

- the organisational model for production well management, including core competencies in well integrity for both offshore and onshore teams with responsibility for operating, monitoring, or maintaining wells.

The production WOMP must include the Conceptual P&A design, including any necessary updates from construction or interventions to current wellbore condition. The conceptual P&A design should define the subsurface barrier requirements, the type of rig or intervention capability required to abandon the well, and the initial time estimate. Changes to the Conceptual P&A design as the result of technology development may be incorporated into the production WOMP by a revision in part. This information may be shared with other agencies to insure consistent reporting of decommissioning planning

The Conceptual P&A plan should also include a well integrity risk register at an appropriate level

NOPSEMA may seek advice from the National Offshore Petroleum Titles Administrator in relation to the subsurface interpretation for permanent barrier placement as presented in the WOMP.

4. Abandonment

The detailed abandonment design should build from the conceptual well design contained in the production WOMP. Legacy assets without abandonment design contained in the production WOMP will be required to include details on the Conceptual Abandonment design, covering the conceptual well abandonment design and risk identification outcomes. NOPSEMA will work through a process of requiring revisions to legacy Production WOMPs to address gaps in assets with shorter remaining production life.

4.1. WOMP for Abandonment

The purpose of the submission is to demonstrate that the risks to well integrity have been identified, and that the control measures being implemented reduce the risk to well integrity to ALARP and an acceptable level practicable to allow for the permanent isolation zone with potential to flow (both hydrocarbon and aquifer). The submission also under pins the acceptance of the Final Abandonment Report, which is a key step for title surrender (S270 of the Act). See NOPSEMA Policy “Section 270 Consent to Surrender Title”

The abandonment WOMP should be submitted around the time of the titleholder’s detailed abandonment design approval gate.

The abandonment WOMP should describe the updated project plan, a synopsis of the abandonment design, and include the barrier location and associated subsurface lithology that forms part of the permanent barriers.

The submission should provide a high-resolution cross section in true vertical depth, which demonstrates key lithology and permanent barrier placement across the field. It must also demonstrate that due diligence has been undertaken regarding the impact on possible carbon capture and storage (CCS) formations in accordance with S570 of the Act.

The submission must include the updated well integrity risk register, and WAC for each element of the well barrier envelopes.

The submission must demonstrate that the Well Delivery Process (WDP) has been followed by providing a tabulated output of the WDP deliverables for the detailed abandonment design of each well described in the WOMP. This must include the Document Titles, Document Numbers and who had provided the assurance for each deliverable.

The submission must include the appropriate management of change for any deliverables described in the Well Delivery Process that have been excluded or altered.

During the assessment of the abandonment WOMP, NOPSEMA will request specific documents as a RFFWI. These will typically be related to areas that NOPSEMA considers higher risk or involves application of complex control measures.

NOPSEMA may seek advice from the National Offshore Petroleum Titles Administrator in relation to the subsurface interpretation presented in the WOMP.

4.1.1. Pre-operational Inspection

Information provided in the submissions will be used to inform part of the scope of the pre-operational inspection ensuring that key operational documents have been generated and that they adequately address the risks identified. The focus of the pre-spud inspection is to ensure that risk identified, and the associate control measures (including appropriate verification) will be effectively communicated to operational staff and contractors with roles in maintaining well integrity.

4.1.2. Compliance Monitoring Inspection

Once the rig has begun abandonment operations a compliance inspection may run for the duration of the operation. This inspection uses the Daily Drilling Reports to confirm that the WACs have been met and assured in accordance with the commitments in the WOMP, and if they have not that the appropriate Management of Change and Risk procedures have been used.

4.2. Final Abandonment Report

The Final Abandonment Report must demonstrate that the well has been abandoned in accordance with the WOMP. It is therefore vital that the WACs for the activities undertaken have been completed as described as this is evidence that the operation has been carried out according to the WOMP.