Oil and Gas Drilling Rig Operations and Well Control			
Business Name:		ABN:	
Business Address:			
Contact Person:	Phone:	Email:	

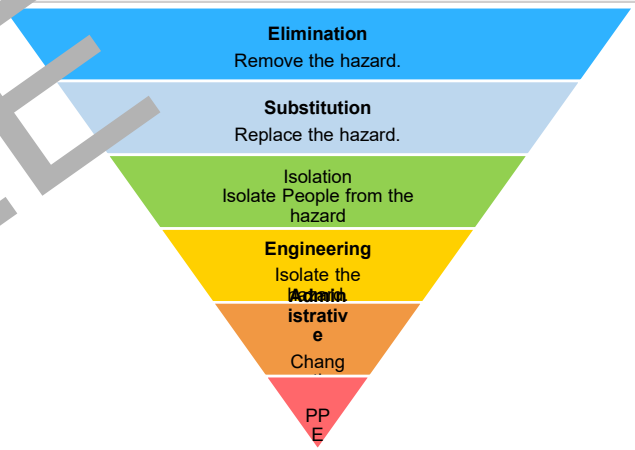
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS	
Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Governance, WHS Duties and Contractor Management	• Unclear allocation of WHS duties between operator, drilling contractor, and specialist service providers (coil tubing, slickline, wireline, frac, flowback, water injection) • Inadequate WHS governance structure for multi-contractor drilling and well operations • Failure to establish and maintain consultation, co-operation and co-ordination arrangements as required under WHS Act 2011 • Conflicting commercial pressures leading to unsafe decisions (e.g. rushing well control operations, deferring maintenance on BOP or frac tanks) • Inadequate pre-qualification and selection of contractors for critical well control and pressure control services • Poor integration of specialist services (wireline perforating, slickline, coil tubing, logging) into the operator's WHS management system	4A	• Establish and document a WHS governance framework that defines PCBU roles, responsibilities and due diligence obligations under the WHS Act 2011 for all parties involved in drilling and well operations • Implement a formal contractor HSE pre-qualification process, including assessment of well control competency, incident history, certification of pressure control equipment, and alignment with the operator's WHS policies • Develop interface documents and bridging WHS management plans that clearly define accountabilities, permit interfaces and handover points between operator, drilling contractor and specialist service providers • Mandate senior management WHS due diligence training covering obligations, hazard profile for oil and gas drilling and well control and expectations for leadership in high-risk operations • Implement regular joint WHS leadership meetings and HSE performance reviews (including leading and lagging indicators) with all key contractors and service companies • Include WHS and process safety performance criteria in contracts, with mechanisms for corrective actions, stop-work enforcement and, where needed, suspension of contractors for serious non-compliance • Ensure systematic consultation mechanisms (HSCs, HSRs, toolbox forums) include all contractors on site, with minutes and action tracking • Conduct periodic independent WHS and process safety audits of the combined drilling and well operations management system and contractor interfaces	3H
2. Safety Management System and Procedures for Well Operations	• Incomplete or outdated safety management system (SMS) for drilling and well operations • Procedures not aligned with current legislation, codes of practice, and industry standards (e.g. API, ISO, NOPSEMA guidance where applicable) • Lack of integrated procedures covering complex well activities (wireline perforating, coil tubing, slickline, logging, production flowback, water injection, casing removal) • Inconsistent use of management of change (MOC) for deviations from drilling program or well control procedures • Failure to embed lessons learned from previous incidents and near misses into procedures	4A	• Develop and maintain a comprehensive, documented Safety Management System for all drilling rig and well control operations, aligned to the WHS Act 2011, relevant WHS Regulations and recognised industry standards • Establish detailed, approved well operations management plans that integrate drilling, casing installation, wireline logging, slickline, coil tubing, perforating, production flowback, water injection and plug and abandonment activities • Implement a formal procedure governance framework, including drafting standards, technical review, legal and WHS review, approval by competent technical authorities, and regular scheduled review dates • Implement a robust Management of Change procedure for any alteration to drilling programs, well control methods, equipment configuration (e.g. BOP stack changes, frac tank layout), or operating limits, with risk assessment and approval workflows • Create a structured process for capturing lessons learned, incident findings and industry alerts, and systematically updating procedures, work instructions and checklists • Ensure procedures clearly specify operational envelopes, pressure limits, barriers, and hold points for activities such as BOP testing, wireline perforating, coil tubing interventions and production flowback • Provide controlled access to SMS and procedures (digital and physical), with clear version control and confirmation that workers have read and understood relevant documents before mobilisation	2M

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	• Overly generic procedures that do not address site-specific and well-specific risks (high pressure / high temperature, sour gas, unusual geology)		• Conduct regular verification through field leadership visits and internal audits to ensure actual work practices align with documented procedures and programs	
3. Well Design, Planning and Engineering Verification	• Inadequate well design not suited to pressure, temperature, formation and production characteristics • Insufficient engineering assessment for high-pressure, sour gas or complex wells (including water injection and multi-zone production) • Poor integration of coil tubing, wireline perforating, slickline and logging requirements into well design and completion programmes • Insufficient verification of casing design, cementing program and barrier philosophy before installation of surface casing and further drilling • Lack of independent technical review of well plans and well control strategies • Well design changes made under time pressure without structured engineering risk assessment	4A	• Implement a formal well planning and design process that includes detailed geological, geomechanical and reservoir analysis for drilling, production, injection and intervention phases • Develop a documented well barrier philosophy and ensure all well designs clearly specify primary and secondary barriers across all operating conditions, including drilling, perforating, coil tubing, flowback and water injection modes • Require peer review and independent verification of well designs, casing and cementing programs, BOP configurations and well control plans by suitably qualified and experienced well engineers • Incorporate requirements for future interventions (wireline logging, perforating, slickline, coil tubing) in the completion and wellhead design to minimise risk of barrier compromise and pressure control failures • Use formal risk assessments (HAZID/HAZOP, bow-tie analysis) for complex and high-risk wells, documenting assumptions, safeguards and contingency plans • Integrate clear technical limits, kick tolerance and equivalent circulating density (ECD) margins into the drilling program, and embed these into real-time monitoring systems and decision trees • Apply rigorous engineering change management for any significant modifications to well design, with documentation of technical justifications, updated risk assessments and approvals	2M
4. Well Control Philosophy, Barriers and Emergency Response	• Inadequate well control strategy for planned drilling, completion, intervention and workover activities • Unclear definition and monitoring of well barriers during operations (drilling, surface casing installation, perforating, coil tubing, slickline, logging, flowback) • Delayed detection of influx or losses due to poor monitoring systems or unclear responsibilities • Poorly defined well control escalation and communication protocols, especially during night shifts or remote operations • Insufficient planning for well control emergencies, including relief well, capping and kill options	4A	[redacted]	2M

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	• Inadequate integration of well control plans with site emergency response plan and off-site support		[redacted]	
5. Blowout Preventer (BOP) Systems and Pressure Control Equipment	• Inadequate specification, certification or maintenance of BOP stacks and associated control systems • Improperly planned or executed BOP testing regimes (frequency, pressures, sequences, documentation) • Failures in annulars, rams, control pods, choke and kill lines due to poor maintenance systems • Lack of clear ownership for critical pressure control equipment used by service companies (wireline, slickline, coil tubing, pressure control heads, lubricators, pack-offs) • Use of incompatible or out-of-date pressure control equipment during wireline perforating or logging operations • Inadequate segregation of high-pressure zones from personnel areas during testing and operations	4A	[redacted]	2M
6. Rig Structural Integrity, Derrick Operations and Hoisting Systems	• Structural failure of derrick or mast due to overloading, corrosion or inadequate inspection • Failure of hoisting and handling systems (drawworks, crown, travelling block, top drive, catwalks) affecting well drilling and casing operations • Uncontrolled loads during derrick operations, wireline logging, slickline and coil tubing interventions • Inadequate control of simultaneous lifting operations with cranes, gin poles and rig hoisting equipment	4A	[redacted]	2M

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SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Poor design and layout of derrick platforms affecting access and emergency egress • Insufficient inspection and maintenance regime for derrick and hoisting systems		[redacted]	
7. Plant, Equipment Maintenance and Integrity Management	• Systemic failures in preventive maintenance for drilling plant, frac tanks, pumps, generators and water injection equipment • Unmanaged degradation of critical safety systems (emergency shutdown systems, fire and gas detection, pressure relief devices) • Inaccurate or incomplete equipment registers for key well control and pressure-containing components • Maintenance deferrals driven by schedule or budget constraints without formal risk assessment • Inadequate mana[redacted]ment of temporary equipment used d[redacted]ng produc[redacted] flowback, water inj[redacted]line a[redacted] coil tubing operations • Poor control of isolations and return-to-service after ma[redacted]ce	4A	[redacted]	2M
8. Management of Coil Tubing, Slickline, Wireline and Logging Operations	• Inadequate integration of coil tubing, slickline, wireline perforating and logging operations into rig and well control systems • Misalignment between service company procedures and operator well control and barrier requirements • Uncontrolled changes to downhole tools, perforating programmes or logging sequences without risk assessment	4A	[redacted]	2M

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SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Incompatible or incorrectly rated surface pressure control equipment for intervention operations • Poor communication and SIMOPS management when conducting interventions during production flowback or water injection • Insufficient control of explosive tools and radioactive sources during wireline perforating and logging		[redacted]	
9. Production Flowback, Frac Tanks and Water Injection Management	• Overpressure, leaks or structural failure of frac tanks, flowback lines and associated equipment • Inadequate layout and containment for flowback and water injection equipment leading to spills and exposures • Poorly controlled changes in flowback rates, pressures or chemical composition affecting well integrity • Inadequate separation and treatment of produced fluids, leading to environmental releases or fire/explosion risks • Lack of clear procedures and monitoring for water injection operations, including injection pressures and volumes • Unclear ownership and maintenance responsibility for frac tanks and temporary flowback equipment supplied by contractors	4A	[redacted]	2M
10. Training, Competency and Well Control Certification	• Insufficient competency of drillers, toolpushers, company representatives and service supervisors in well control and critical operations • Lack of formal competency assessment for personnel involved in coil tubing, slickline, wireline perforating, logging and flowback control	4A	[redacted]	2M

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	• Out-of-date well control certification or inadequate training content for emerging technologies and hazards • Over-reliance on experience without verification of current skills and knowledge • Inadequate induction and familiarisation for new starters or contractor personnel on site-specific hazards and systems • Insufficient leadership training for supervisors on managing safety and production pressures		[redacted]	
11. Fatigue, Rostering and Remote Operations Management	• Excessive working hours and poor rostering practices leading to fatigue-related errors in well control and critical decision-making • Inadequate monitoring of fatigue for personnel working extended rosters in remote locations • Insufficient controls for night-time operations, including staffing, supervision and technical support availability • Pressure to continue operations despite adverse weather, access limitations or reduced crew competency due to illness • Psychological stress and reduced wellbeing for remote workers, impacting safety culture and performance	3H	[redacted]	2M
12. Permit to Work, Isolation and Simultaneous Operations (SIMOPS)	• Uncontrolled simultaneous operations (drilling, interventions, flowback, water injection, maintenance) causing loss of barriers or conflicts • Poorly managed permit to work (PTW) system leading to conflicting high-risk activities	4A	[redacted]	2M

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SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Inadequate isolation and verification of energy sources before intrusive work on pressure systems • Failure to recognise interactions between contractor activities and well control systems • Paper-based or fragmented PTW records that do not provide real-time view of site activities		[redacted]	
13. Emergency Preparedness, Incident Management and Recovery	• Inadequate preparedness for major incidents such as blowouts, fires, explosions, toxic releases or structural collapse • Poorly defined roles and responsibilities in emergency response teams for onshore and offshore drilling operations • Insufficient coordination with externa emergency services and regulators • Lack of realistic emergency exercises addressing well control ring drilling, intervention r flowback • Weak systems fo ost-incid investigation, learni organisational change	4A	[redacted]	2M
14. Hazardous Substances, Pressure, Fire and Explosion Risk Management	• Uncontrolled release of hydrocarbons, chemicals or produced fluids during drilling, flowback or interventions • Inadequate management of flammable atmospheres around rig floor, flowback and frac tank areas • Poor chemical management for drilling fluids, stimulation fluids and water injection chemicals • Inadequate hazardous area classification and control of ignition sources, including non-rated equipment	4A	[redacted]	2M

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	• Insufficient process safety focus on high-pressure systems beyond personal safety considerations		[redacted]	
15. Environmental Protection and Waste Management for Well Operations	• Unplanned release of drilling fluids, produced water, hydrocarbons or chemicals to land or water • Inadequate management of drilling cuttings, flowback fluids and water injection by-products • Insufficient containment and drainage systems around rig, flowback and injection areas • Non-compliance with environmental approvals and licence conditions for drilling and production operations • Failure to consider environmental risks in planning of casing removal, well abandonment and site rehabilitation	3H	[redacted]	2M

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/codes-of-practice

South Australia
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/legislation
Codes of Practice for SA: https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs

Tasmania
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

Victoria
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

Western Australia
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

Safe Work Australia Links
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work