

LIFECYCLE OF A WELL – REGULATORY FRAMEWORK

These Regulations have been proposed under the *Petroleum and Geothermal Energy Resources Act 1967* to replace the existing *Schedule of Onshore Petroleum Exploration and Production Requirements - 1991* (Amended 21 May 2010)

Objective based rather than prescriptive

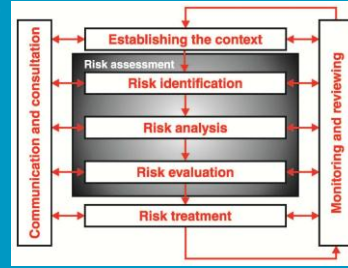
This process is Quality Management System
Certified to ISO 9001:2008 standard

STRUCTURE OF REGULATIONS

- Part 1 – Preliminary
- Part 2 – Survey
- Part 3 – Management of Well Activities
- Part 4 – Discovery Assessment Reports
- Part 5 – Annual Assessment Reports
- Part 6 – Field Development Plans Petroleum
- Part 7 – Other Matters – Petroleum/GTE Recovery
- Part 8 – Data Management
- Part 9 – Release of Technical Information

RISK MANAGEMENT PROCESS (AS/NZS ISO 31000:2009)

- Identify the risk
- Likelihood
- Consequences
- Mitigation
- Monitoring
- Remediation



PART 3 – MANAGEMENT OF WELL ACTIVITIES

PLANNING

Before commencing drilling, an operator must have an approved:

- Environment Plan (EP)
- Safety Management System (SMS)
- Well Management Plan (WMP)
- Land access agreement

DMP will rigorously evaluate the application to ensure that:

- Well integrity is maintained including:
 - checking casing and cementing programs at appropriate depths during drilling;
 - monitoring well completions and production; and
 - well abandonment or suspension
- Aquifers and resources are protected

DMP will also:

- Attend HAZOP and HAZID meetings
- Attend pre-spud contractor meetings
- Monitor the full lifecycle of the well



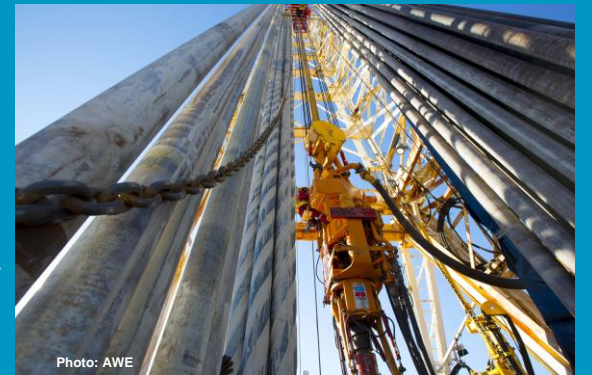
DRILLING

DMP will require operators to:

- Conduct baseline monitoring of aquifers in new areas
- Monitor and verify cementing operations (logging)
- Conduct real time monitoring of pressures and drilling fluids during operations, reported to DMP daily
- Review micro-seismic monitoring of stimulated well, where applicable
- Submit daily drilling reports and well completion reports once the well has been drilled

DMP achieves this by:

- Reviewing operators' internal audits of operations and systems to ensure they are properly applied
- Putting conditions on application and authorising permission to drill
- Monitoring daily drilling and geological reports and auditing of field activities
- Consultation and approval at key points of the well
- Reviewing and approving completion, production, suspension or plug and abandonment programs upon conclusion of drilling operations



PRODUCTION

Operator:

- Submits a Discovery Report
- Submits a Declaration of Location (DoL) and Field Development Plan (FDP)
- Applies for a Production Licence

DMP:

- Receives, assesses and approves application to drill and complete
- Receives, assesses, comments on and accepts DoL and FDP
- Receives and monitors daily drilling reports (DDR) following commencement of drilling
- Approves commencement of and monitors production or extended production test (EPT), establishes production rate
- During production -
 - receives and monitors annual title assessment reports and monthly production reports
 - assesses and monitors well workovers, interventions, Well Management Plans (WMP), Safety Management System (SMS) (when required) and Environment Plan (EP)
 - audits production metering



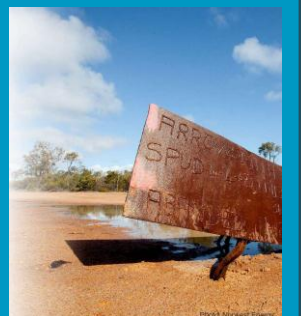
WELL AND FIELD DECOMMISSIONING

When a well is to be abandoned, DMP requires the titleholder:

- To submit a WMP detailing the plug and abandonment procedure
- Justify that the well is no longer economical to produce; and
- Provide a descriptive procedure on plugging and abandonment of the well(s), including removal of the wellhead(s) and rehabilitation of the site

If the field is being decommissioned the operator is required to submit a Field Abandonment Plan (FAP). The FAP should detail the removal of surface facilities and environmental remediation of the field

As with all oilfield operations, approval is given if it is demonstrated that the program is in accordance with industry best practice, standards and codes



PART 6 – FIELD DEVELOPMENT PLAN (FDP)

PART 7 – GEOTHERMAL ENERGY RECOVERY DEVELOPMENT PLAN (GERDP)

- Parts 6 and 7 spell out the legal mechanics and penalties for FDPs and GERDP
- A licence to produce may be issued without an approved Field Development Plan
- Actual production cannot commence without an approved FDP or approval to undertake an extended Production Test
- Actual production cannot commence without an approved Rate of Recovery
- Schedule 3 and 4 provide general details of what is required in the plans



Government of Western Australia
Department of Mines and Petroleum