



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **PMAOPS233A Monitor wells and gathering systems**

**Revision Number: 1**

## PMAOPS233A Monitor wells and gathering systems

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit of competency is an entry level competency for a field operator. It covers the basic skills required to monitor wells and associated equipment in the field and to recognise and report problems, but not necessarily to rectify problems or make adjustments.
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### Application of the Unit

<b>Application of the unit</b>	<p>This unit of competency applies to field operators who are responsible for a number of wells and their associated systems. In a typical scenario, the operator will be driving alone, on and off roads between wells and also to and from the base site or plant. While at a site, they will be monitoring well and equipment performance by taking readings, making checks, recording and reporting their findings in accordance with procedures. They will also be expected to identify hazards and take appropriate action.</p> <p>This competency is typically performed by operators working independently while in communication with a field or plant operator with whom they would work as part of a team. At all times they would be liaising and cooperating with other members of the team.</p>
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### Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Identify work requirements 1.2. Identify and control hazards 1.3. Coordinate with appropriate personnel 1.4. Determine appropriate route/schedule for day's work
2. Complete site checks	2.1. Check equipment condition and operation 2.2. Check required levels 2.3. Top up levels as required 2.4. Complete logs and reports as required
3. Use well control systems as required	3.1. Check well control systems validity 3.2. Perform other required well control system tasks 3.3. Complete logs and reports as required
4. Take required readings	4.1. Complete all required readings for site 4.2. Compare all read values with the desired range 4.3. Compare read values with previous log sheet values 4.4. Complete logs and reports as required
5. Complete required lease maintenance	5.1. Inspect lease area for items requiring action 5.2. Complete required lease maintenance actions 5.3. Complete logs and reports as required
6. Finalise shift activities	6.1. Complete shift tasks as appropriate 6.2. Ensure identified faults are correctly logged/reported for action 6.3. Ensure incomplete tasks are scheduled for follow up 6.4. Ensure all logs and reports are complete and understood

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

Required skills include:

- recognising conditions which will lead to out of specification operation
- implementing enterprise procedures within time constraints and in a manner relevant to the correct use of the equipment
- conveying information relevant to the operation clearly and effectively
- maintaining appropriate levels of quality assurance
- reading and numeracy to interpret workplace documents and technical information

#### Required knowledge

Required knowledge includes:

- coal seam gas (CSG) formation, structure and completions
- coal type and structure
- well design and construction
- hydrate formation
- free flow and pumped wells
- pumping principles
- gas flow principles
- gas/water separation principles
- draining and venting requirements
- typical issues causing problems
- lease requirements
- process parameters and limits (e.g. temperature, pressure, flow and pH)
- duty of care obligations
- hierarchy of control
- static electricity and earthing
- chemical handling and material safety data sheets (MSDS)
- communication protocols (e.g. radio, phone, computer, paper and permissions/authorities)
- routine problems, faults and their symptoms
- relevant alarms and actions
- plant process idiosyncrasies
- all items on a schematic of the plant item and the function/principles of operation of each
- physics and chemistry relevant to each unit and the processes used
- flange pressure and temperature ratings (basic)

**REQUIRED SKILLS AND KNOWLEDGE**

- cathodic protection (basic)
- relevant environmental and heritage requirements
- protective systems
- control systems
- remote terminal unit, functions, operation and problems

## Evidence Guide

### EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

#### Overview of assessment

This unit of competency requires an application of the knowledge contained in the use of the equipment, to the level needed to maintain control and recognise and resolve problems.

#### Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment for this unit of competency will be on a plant.

It is essential that the equipment be understood and that the importance of critical material properties, settings and readings is known. Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action.

Consistent performance should be demonstrated. In particular look to see that:

- appropriate inspections are made
- required readings are taken
- early warning signs of equipment processes needing attention or with potential problems are recognised
- necessary actions are completed.

Competence must be demonstrated in the operation of all ancillary equipment to the level required for this unit of competency.

#### Context of and specific resources for assessment

Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D

<b>EVIDENCE GUIDE</b>	
	<p>virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life-threatening situations, simulation may be used for the bulk of the training.</p> <p>A bank of scenarios/case studies/what-ifs and questions will be required to probe the reasoning behind observable actions.</p>
<b>Method of assessment</b>	<p>In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.</p> <p>Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes.</p>
<b>Guidance information for assessment</b>	<p>Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.</p>



## Range Statement

### RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

#### Procedures

Procedures may be written, verbal, computer-based or in some other form. They include:

- all work instructions
- standard operating procedures
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant

For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Responsible Care) and government regulations

All work will comply with procedures

#### Site

Site may be:

- a well
- a nominated area in the gathering system
- another location where the operator is required to work

#### Equipment

Typical items of plant and equipment included in this unit of competency are:

- wellheads
- choke and control valves
- meters
- flow lines
- high point vents
- low point drains

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• valves including non-return and pressure/vacuum relief</li> <li>• pumps and their prime movers</li> <li>• product separation units</li> <li>• instrumentation and control systems (variable speed drive (VSD) and proportional integral derivative (PID))</li> <li>• testing equipment</li> <li>• power units</li> <li>• drive heads</li> <li>• flares</li> </ul>
<b>Equipment condition and operation</b>	<p>Equipment condition and operation may include:</p> <ul style="list-style-type: none"> <li>• chemical injection equipment</li> <li>• storage tanks</li> <li>• pumps and pump speed</li> <li>• autodumps</li> <li>• drains and drain points</li> <li>• vents and high points</li> <li>• leaks</li> <li>• other items</li> </ul>
<b>Levels</b>	<p>Levels may include:</p> <ul style="list-style-type: none"> <li>• chemical storage levels</li> <li>• lubricating oil levels</li> <li>• water and gas levels</li> <li>• battery levels</li> <li>• drain levels</li> <li>• other levels</li> </ul>
<b>Logs and reports</b>	<p>Logs and reports may be paper or electronic based and may also include verbal/radio reports</p> <p>Reports include reporting items found which require action</p>
<b>Lease maintenance areas requiring action</b>	<p>Lease maintenance areas requiring action may include:</p> <ul style="list-style-type: none"> <li>• land erosion</li> <li>• fence and gate integrity</li> <li>• weeds and other growth</li> <li>• actions of feral or other fauna</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• other required items</li> </ul>
<b>Identified faults</b>	<p>Identified faults may include:</p> <ul style="list-style-type: none"> <li>• instrumentation failure/malfunction</li> <li>• electrical failure/malfunction</li> <li>• mechanical failure/malfunction</li> <li>• control system failure/malfunction</li> <li>• mismatch between flow rates and system requirements</li> <li>• wear, tear and corrosion of plant and equipment</li> </ul>
<b>Typical problems</b>	<p>Typical problems may include:</p> <ul style="list-style-type: none"> <li>• leakage</li> <li>• solids (formation fines)</li> <li>• vibration</li> <li>• loss of control of pressure and/or flow</li> <li>• hydrate formation and blockages</li> <li>• liquid slugging</li> <li>• corrosion</li> <li>• erosion</li> <li>• sulphate reducing bacteria</li> <li>• scale formation</li> <li>• equipment failure</li> </ul>
<b>Health, safety and environment (HSE)</b>	<p>All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state, territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence</p>

## Unit Sector(s)

<b>Unit sector</b>	Operational/technical
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## Competency field

Competency field	
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## Co-requisite units

Co-requisite units		