



Australian Government

PMAOPS339 Operate and troubleshoot wells and gathering systems

Release: 1

PMAOPS339 Operate and troubleshoot wells and gathering systems

Modification History

Release 1. Unit code and title changed. Application and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMAOPS333 Operate wells and gathering systems.

Application

This unit describes the skills and knowledge required to operate wells and gathering systems in the field.

This unit applies to autonomous field operators who are required to demonstrate a significant understanding of the process and the equipment operation for work undertaken in any location in the field, including wells, nominated areas in the gathering system and other locations. Typically, the operator will be driving alone, on and off roads between wells and to and from the base site or plant.

This unit applies to an individual working alone or as part of a team or group. and working in liaison with other shift team members and the control-room operator, or other senior operator, as appropriate.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil

Competency Field

Operations

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Operate well and gathering system according to procedures	1.1 Receive and give shift handover 1.2 Communicate with personnel to identify and coordinate work requirements 1.3 Identify, control and report process system hazards 1.4 Check for recent work undertaken on well and gathering system and

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	address outstanding and incomplete work 1.5 Check operational status of process system 1.6 Perform routine site and equipment checks, and complete logs and paperwork, taking action on readings 1.7 Adjust process system according to agreed operational parameters
2. Identify and respond to abnormal situations during operation	2.1 Monitor well and gathering system frequently and critically throughout shift using own senses and measured and indicated data 2.2 Monitor field data and instrumentation to ensure that product remains on specification 2.3 Identify impacts of changes upstream and downstream 2.4 Identify actual and developing situations that may require action 2.5 Take action to remedy abnormal situations according to operating procedures 2.6 Complete required documents outlining abnormal situation management and corrective action taken
3. Shut down and prepare well and gathering system for maintenance	3.1 Prepare process system to be shut down according to operating procedures 3.2 Complete pre-shutdown checks according to operating procedures 3.3 Shut down process system according to operating procedures 3.4 Identify, control and report shutdown hazards 3.5 Monitor shutdown and identify abnormal situations which may require action 3.6 Take action to remedy abnormal situations according to operating procedures 3.7 Shut down and changeover duty and standby equipment according to operating procedures 3.8 Isolate process system from energy sources
4. Prepare and start up well and gathering system	4.1 De-isolate and prepare process system to be returned to standby or service 4.2 Complete pre-start checks according to operating procedures 4.3 Start up process system according to operating procedures 4.4 Identify, control and report startup hazards

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.5 Monitor startup and identify abnormal situations that may require action 4.6 Take action to remedy abnormal situations according to operating procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Learning skills to follow instructions, monitor process and select appropriate procedure.
- Reading skills to follow written procedures and documentation.
- Writing skills to complete workplace documentation.
- Oral communication skills to liaise and coordinate with team members, the control-room operator and senior operators.
- Numeracy skills to monitor field data, instrumentation and process parameters, including calculating volumetric flow rate and equipment efficiencies.

Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Release 1. Supersedes and is equivalent to PMAOPS333 Operate wells and gathering systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>

Assessment Requirements for PMAOPS339 Operate and troubleshoot wells and gathering systems

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit:

- at least 2 times, each in a separate work context, including:
 - shutting down in an emergency.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- principles of:
 - well design and construction
 - pumping
 - gas flow
 - gas and water separation
 - equalization
- all items on a schematic of the production unit, including:
 - operation of plant and equipment
 - downhole drawings (DHDs) and their application to plant and well operation
 - types of wells and gathering systems, including free-flow and pumped wells
 - draining and venting requirements
 - remote terminal unit functions, operation and abnormal situations
 - interactions between plant items and processes
 - operating parameters and integrity limits, and product specifications and tolerances including flange pressure and temperature ratings (basic), temperature, pressure and flow
 - impact of external factors (including variations in weather and feed)
 - procedures for starting, stopping, operating, controlling and isolating the system
 - functions of major components and troubleshooting techniques
- local lease and well operations requirements, arrangements and constraints
- well services handover and intervention procedures
- reservoir management, hydraulics, hydrates, hydrate inhibition, subsea as appropriate

- physics and geology to the level of being able to provide an overview of the science of the well and gathering system process, including coal seam gas (CSG) formation, structure and completions, coal type and structure, well design and construction, fluid dynamics and statics as relevant to the system, natural gas and oil characteristics, hydrate formation, cathodic protection (basic), static electricity and earthing, corrosion control and chemical handling, and safety data sheets (SDS)
- well and gathering system abnormal situations and required action, including but not limited to:
 - leakage
 - solids (formation fines)
 - vibration
 - loss of control of pressure and/or flow
 - hydrate formation and blockages
 - liquid slugging
 - corrosion
 - erosion
 - sulphate-reducing bacteria
 - scale formation
 - equipment failure
 - change in product parameter (temperature, flow, pressure or level)
 - fouling or contamination
- hierarchy of control
- wells and gathering systems hazards:
 - possible causes
 - potential consequences
 - appropriate risk controls
 - escalation and reporting procedures.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - well and gathering system
 - operating procedures.
- abnormal situations must be relevant to wells and gathering systems.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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