



Australian Government

AHCIRG346 Operate pressurised irrigation systems

Release: 1

AHCIRG346 Operate pressurised irrigation systems

Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 4.0.

Application

This unit of competency describes the skills and knowledge required to pre-start check, inspect, start up, operate, monitor and shut down pressurised irrigation systems.

The unit applies to individuals who operate pressurised irrigation systems under broad direction and take responsibility for their own work.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Irrigation (IRG)

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. Carry out pre-start checks	1.1 Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe working practices to manage risks 1.2 Select required tools and equipment and check for safe operation 1.3 Select, fit and use personal protective equipment applicable to the task 1.4 Check water, power, fuel and lubricants to confirm all are available and the control system is operational

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.5 Prime pumps, if necessary, and open or close valves and controls as directed 1.6 Calibrate pressure and flow testing equipment 1.7 Carry out other pre-start system checks
2. Inspect and operate the system	2.1 Implement start up sequence according to operation and maintenance procedures 2.2 Check emitter spacing against the irrigation plan 2.3 Adjust water pressure as required 2.4 Clear and replace filters as required 2.5 Correct or repair all malfunctions, leaks and blockages and report
3. Monitor irrigation system performance	3.1 Check emitters for output 3.2 Calculate application rate of water 3.3 Check the water distribution pattern in the irrigated area 3.4 Monitor moisture levels in the root zone 3.5 Minimise environmental impacts of the operation
4. Shut down irrigation system	4.1 Apply water for sufficient time to achieve required soil moisture levels and allow for weather conditions 4.2 Shut down system components and drain 4.3 Record and report irrigation activities according to workplace recording procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Interpret textual information from a range of sources to identify relevant and key information about workplace operations
Writing	Use the correct terminology to document irrigation activities

Skill	Description
Oral communication	Use clear language to report irrigation activities
Navigate the world of work	Recognise and follow workplace requirements, including safety requirements, associated with own role and area of responsibility

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCIRG346 Operate pressurised irrigation systems	AHCIRG332 Operate pressurised irrigation systems	Performance criteria clarified Foundation skills added Assessment requirements updated	Equivalent unit

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCIRG346 Operate pressurised irrigation systems

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit. There must be evidence that the individual has operated a pressurised irrigation system on at least two occasions and has:

- applied workplace health and safety requirements
- selected tools and equipment appropriate to the scope of works
- read and followed operations manual and procedures
- started the system and carried out operational checks
- monitored system effectiveness, including:
 - application rates
 - depth of irrigation
 - emitter output
 - irrigation times
 - pressure variations and blockages
 - salinity levels and water quality
- carried out measurements for output and distribution
- measured and interpreted flow rates and pressures
- assessed soil moisture levels
- performed shut down procedures
- recorded data.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- workplace requirements applicable to health and safety in the workplace for operating pressurised irrigation systems
- electrical hazards, including:
 - contact with pumps, motors, other live components

- short circuits
- standing laterals to remove blockages
- water spray onto power lines
- energy efficiency indicators and benchmarks for pressurised irrigation
- pressurised irrigation equipment operation and maintenance manual
- main components of pressurised irrigation systems
- pump types used in irrigation systems and their operation
- general irrigation methods for low volume systems
- principles of irrigation and the water cycle
- critical measures for moisture availability, including:
 - evapotranspiration
 - field capacity
 - infiltration rates
 - readily available water
 - water holding capacity
 - wilting point
- soil characteristics
- soil, plant and water relationships
- water requirements of plants and crops consistent with sound environmental management
- environmental impacts of irrigation using water from any ground or underground source
- shutdown sequence and flushing procedures.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - a workplace setting or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - pressurised irrigation system operation and maintenance manual
 - pressurised irrigation system equipment
 - personal protective equipment applicable to operating pressurised irrigation systems
- specifications:
 - work instructions and workplace procedures applicable to operating pressurised irrigation systems
 - pressurised irrigation system tools and equipment and procedures
 - workplace requirements applicable to health and safety in the workplace and operating pressurised irrigation systems
 - recording procedures
- relationships:
 - supervisor
- timeframes:

- according to job requirements.

Assessors of this unit must satisfy the requirements of assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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