



Australian Government

AHCIRG336 Operate and maintain gravity fed irrigation systems

Release: 1

AHCIRG336 Operate and maintain gravity fed 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 operate and maintain gravity fed irrigation systems.

The unit applies to individuals who operate and maintain gravity fed 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. Prepare for gravity fed irrigation system operation and maintenance	1.1 Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe working practices to manage risks 1.2 Select and use required materials, tools, equipment and machinery, and check for safe operation 1.3 Select, fit, use and maintain safety and personal protective equipment applicable to the task
2. Operate pumps and	2.1 Prime pumps and open or close valves and controls

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
delivery mechanisms	2.2 Position and set up pipes, system equipment and outlets 2.3 Set and operate delivery mechanisms 2.4 Implement start-up sequence and slowly build up water levels and pressure 2.5 Check pressure at the head-works and control valves 2.6 Distribute water evenly to the targeted areas with minimal wastage and run-off 2.7 Irrigate area and observe time lag between shutdown and end of watering to minimise run-off and deep percolation
3. Monitor drainage and tail-water systems	3.1 Monitor water intake, conveyance and distribution, drainage and tail-water 3.2 Check water reuse systems for clearance and freedom from weeds 3.3 Monitor pumps, if used, during operation, clear rubbish from outlets and backflush pump
4. Inspect gravity fed irrigation system	4.1 Record damage and blockages with contaminants by damage type, location and the section of the system affected 4.2 Record and report damaged or faulty pumps, valves, electrical components and computer control systems, and take action to effect repairs
5. Maintain gravity fed irrigation system	5.1 Service water measuring, diversion and conveyancing, and distribution structures 5.2 Carry out vegetation control to keep all system components clear 5.3 Service and repair machinery according to operation and maintenance manual
6. Record and report maintenance activities	6.1 Record machinery service and repair according to operation and maintenance manual 6.2 Collect, treat and dispose of or recycle waste according to industry 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	Complete workplace records legibly and accurately using correct technical terminology
Oral communication	Initiate discussions with supervisor using clear language to communicate damage and blockages
Numeracy skills	- Measure water levels - Calculate water flow rates and water usage
Navigate the world of work	Recognise and follow workplace requirements, including safety requirements, associated with own role and area of responsibility
Interact with others	Use appropriate language and communication skills to disseminate information about system damage and blockages

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCIRG336 Operate and maintain gravity fed irrigation systems	AHCIRG334 Operate and maintain gravity fed irrigation systems	Performance criteria clarified Foundation skills added Assessment requirements updated	No 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 AHCIRG336 Operate and maintain gravity fed 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 and maintained a gravity fed irrigation system on at least one occasion, and has:

- applied workplace health and safety requirements
- selected materials, tools, equipment and machinery appropriate to the scope of works
- adjusted and monitored check valves
- checked the serviceability of delivery mechanisms
- set up and started delivery systems
- checked pressure at the head-works and control valves
- identified variations in water flow and distribution
- measured water usage
- inspected irrigation systems
- carried out running repairs on irrigation delivery and drainage systems
- removed and replaced gates, slides and doors
- removed and replaced valves and filters
- undertaken minor repairs of equipment
- carried out shutdown procedures, cleaned equipment and disposed of waste
- recorded machinery service and repair.

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 and maintaining gravity fed irrigation systems
- machinery operation and maintenance manual
- characteristics and operation of components of a gravity fed irrigation system

- common operational and maintenance problems
- routine and end of season maintenance requirements
- weed disposal methods.

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:
 - gravity fed irrigation system materials, tools, equipment and machinery
 - gravity fed irrigation pump system tools and equipment and procedures
 - personal protective equipment applicable to operating and maintaining gravity fed irrigation systems
- specifications:
 - work instructions and workplace procedures applicable to operating and maintaining gravity fed irrigation systems
 - workplace requirements applicable to health and safety in the workplace and operating and maintaining gravity fed irrigation systems
 - machinery operation and maintenance manual
 - recording procedures
 - environmental procedures for collection, treatment, disposal or recycling of waste
- timeframes:
 - according to job requirements.

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

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