



Australian Government

AHCDRG404 Monitor and control irrigation drainage systems

Release: 1

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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 assess drainage and collection systems, monitor, control, and troubleshoot irrigation drainage systems, clear drainage system blockage or replace blocked section and record and report system performance status.

The unit applies to individuals who apply specialised skills and knowledge to the monitoring and controlling of irrigation drainage systems and have responsibility for the output of others. This includes applying and communicating non-routine technical solutions to predictable and unpredictable problems.

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

Pre-requisite Unit

Nil

Unit Sector

Drainage (DRG)

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. Assess irrigation drainage and collection systems	1.1 Measure drainage performance according to current industry standards 1.2 Measure drainage and tail water quality according to current industry standards 1.3 Measure water table depth where required according to current

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	industry standards 1.4 Measure soil salinity where required according to current industry standards 1.5 Record results according to current industry standards 1.6 Identify and record factors external to the system which may cause interference 1.7 Analyse drainage system data and compare to the performance specified in the irrigation drainage plan
2. Regulate flows	2.1 Inspect flow regulating systems and apply adjustments to achieve specified discharge requirements 2.2 Monitor discharge flows and apply diversions to facilitate repair or emergency
3. Control and operate drainage system structures and processes	3.1 Identify processes to maintain specified performance 3.2 Develop and implement maintenance procedures 3.3 Identify, address and report operational conditions of the drainage system 3.4 Integrate processes to improve drainage network performance
4. Troubleshoot drainage problems	4.1 Identify potential hazards and risks and implement safe working practices to manage risks 4.2 Minimise environmental impacts of drainage system troubleshooting activities 4.3 Select, fit and use personal protective equipment applicable to the task 4.4 Conduct a visual inspection to determine damaged or broken components and record results 4.5 Inspect drained areas for signs of water pooling and record problems
5. Clear drainage blockage or replace blocked section	5.1 Access drainage lines to allow blockage to be cleared 5.2 Clear blockage or replace blocked section 5.3 Test drainage line to confirm blockage is cleared from pipe system 5.4 Repair or reseal drainage line to permit normal use 5.5 Rehabilitate drainage site according to current industry standards

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
6. Record and report system performance status	6.1 Record and report water quality 6.2 Record and report water table depth, soil moisture and salinity 6.3 Document strategies for dealing with and minimising environmental impacts and maximising positive impacts of the drainage system

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	Identify and interpret information regarding monitoring and controlling irrigation drainage systems
Oral communication	Use clear language to report operational conditions of the drainage system and system performance status
Navigate the world of work	Identify and describe own 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
AHCDRG404 Monitor and control irrigation drainage systems	AHCDRG402 Monitor and control irrigation drainage 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 AHCDRG404 Monitor and control irrigation drainage 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 monitored and controlled an irrigation drainage system on at least one occasion and has:

- applied soil moisture testing techniques
- measured, recorded and reported water table depth, soil moisture and salinity
- calculated water volumes from rate and depth
- analysed drainage system data
- isolated drainage lines
- controlled and operated drainage system structures and processes
- applied workplace health and safety requirements
- identified and minimised adverse environmental impacts of drainage systems
- cleared and refilled drainage lines
- cleared blockages from drainage systems.

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:

- measuring and monitoring procedures for factors contributing to drainage system performance
- water quality monitoring methods and techniques
- soil moisture measurement procedures
- principles and practices for monitoring irrigation drainage systems, including:
 - components used in drainage systems
 - isolation processes and procedures
 - levelling and alignment processes
 - types and operational parameters of drains

- safe working practices applicable to troubleshooting and clearing irrigation drainage systems and replacing blocked sections of irrigation drainage systems
- workplace requirements applicable to health and safety in the workplace for monitoring and controlling irrigation drainage systems
- environmental impacts of drainage systems.

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:
 - irrigation drainage system troubleshooting and clearing tools and equipment
 - personal protective equipment applicable to troubleshooting and clearing irrigation drainage systems
- specifications:
 - workplace requirements applicable to health and safety in the workplace and monitoring and controlling irrigation drainage systems
 - irrigation drainage system water and soil testing equipment and procedures
 - workplace procedures applicable to health and safety in the workplace and monitoring, controlling, troubleshooting and clearing an irrigation drainage systems
 - irrigation drainage plan
- timeframes:
 - according to the 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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