



Australian Government

AHCIRG441 Evaluate water supply for irrigation

Release: 1

AHCIRG441 Evaluate water supply for irrigation

Modification History

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

Application

This unit of competency describes the skills and knowledge required to determine irrigation water needs, assess water quality of water source, determine cost and availability of alternative water sources and complete water sourcing or acquisition arrangements.

The unit applies to individuals who apply specialised skills and knowledge to evaluate water supply for irrigation. 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

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. Determine water needs for irrigation	1.1 Determine the water needs of plants to be irrigated 1.2 Calculate the permeability of the soil and deep drainage losses 1.3 Calculate evapotranspiration rates through the growing season 1.4 Calculate soil water deficits throughout the season based on expected rainfall 1.5 Calculate the amount of irrigation water required through the

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	growing season
2. Assess a water source for water quality	2.1 Test and record water source for electrical conductivity and analyse results 2.2 Collect water samples for testing and interpret results
3. Determine cost and availability of alternative water sources	3.1 Evaluate water availability and access requirements for water sources 3.2 Cost capital expenditure requirements 3.3 Cost operating expenditure requirements 3.4 Investigate regulatory requirements for sourcing irrigation water and incorporate into business planning
4. Complete water sourcing or acquisition arrangements	4.1 Make contractual arrangements for sourcing of water 4.2 Plan for short term purchasing or selling of water depending on seasonal conditions if necessary

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 water supply for irrigation
Writing	Record scheduling system information for each irrigation, significant rainfall events and other appropriate parameters
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
AHCIRG441 Evaluate water supply for irrigation	AHCIRG426 Evaluate water supply for irrigation	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 AHCIRG441 Evaluate water supply for irrigation

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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 evaluated water supply for irrigation on at least one occasion and has:

- estimated the irrigation requirements of plants
- calculated water losses in an irrigation system
- interpreted results for electrical conductivity of irrigation water
- taken water samples
- calculated capital and operating expenditure for a water supply system
- compared costs for different water sources.

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:

- plant water requirements in terms of water quality and frequency of supply
- salinity and composition impacts on soil structure and plant growth
- soils and water, soil moisture retention and movement, plant root zones and development, infiltration and leaching
- climatic factors in irrigation development, rainfall, evaporation, evapotranspiration and hydrology
- irrigation drainage, seepage, surface and subsurface drainage systems
- irrigation scheduling, soil moisture measurement
- efficiency of irrigation systems and long-term viability
- management planning and operation of water allocations
- cost benefit analysis
- capital and operating expenditure calculations to source water
- operations and maintenance requirements
- legislation relevant to the supply of water for irrigation.

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:
 - water source sampling and testing equipment and procedures
 - legislation relevant to the supply of water for irrigation
- 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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