



Australian Government

AHCIRG426 Evaluate water supply for irrigation

Release: 1

AHCIRG426 Evaluate water supply for irrigation

Modification History

Release Number	TP Version	Comments
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to evaluate a water supply for irrigation.

It applies to individuals who analyse information and exercise judgement to complete a range of advanced skilled activities and demonstrate deep knowledge in a specific technical area. They have accountability for the work of others and analyse, design and communicate solutions to a range of complex problems. All work is carried out to comply with workplace procedures.

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

Pre-requisite Unit

Nil.

Unit Sector

Irrigation (IRG)

Elements and Performance Criteria

Element	Performance criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
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 growing season

Element	Performance criteria
2. Assess a water source for water quality	2.1 Test water source for electrical conductivity and analyse results 2.2 Test water source for ionic composition and analyse results 2.3 Test water source for biological composition and analyse 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 purchasing irrigation water and incorporate into business planning
4. Complete water sourcing or acquisition arrangements	4.1 Make contractual arrangements for purchase or sourcing of water 4.2 Plan for short term purchasing or selling of water depending on seasonal conditions if necessary

Foundation Skills

Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Unit Mapping Information

This unit is equivalent to AHCIRG426A Evaluate water supply for irrigation.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCIRG426 Evaluate water supply for irrigation

Modification History

Release Number	TP Version	Comments
1	AHCv1.0	Initial release

Performance Evidence

The candidate must be assessed on their ability to integrate and apply the performance requirements of this unit in a workplace setting. Performance must be demonstrated consistently over time and in a suitable range of contexts.

The candidate must provide evidence that they can:

- analyse results for electrical conductivity and ionic composition of irrigation water
- apply principles of hydraulics to the selection of irrigation systems, legal access and structures
- calculate capital and operating expenditure for a water supply system
- calculate water losses in an irrigation system
- compare costs for different water sources
- estimate the irrigation requirements of plants
- take water samples

Knowledge Evidence

The candidate must demonstrate knowledge of:

- capital and operating expenditure calculations to source water
- climatic factors in irrigation development, rainfall, evaporation, evapotranspiration and hydrology
- conveyance and disposal of drained effluent
- cost benefit analysis
- efficiency of irrigation systems and long-term viability
- environmental and energy-use implications of resource utilisation and development
- irrigation drainage, seepage, surface and subsurface drainage systems
- irrigation scheduling, soil moisture measurement
- management planning and operation of water allocations
- operations and maintenance requirements
- plant physiology and plant water use, transpiration crop water requirements in terms of water quality and quantity

- plant water requirements in terms of water quality and frequency of supply
- re-use systems, management of irrigation systems
- salinity and ionic composition impacts on soil structure and plant growth
- selection of irrigation systems
- soils and water, soil moisture retention and movement, plant root zones and development, infiltration and leaching
- types of irrigation systems
- water legislation
- water supply potential for the development of irrigation systems

Assessment Conditions

Assessors must satisfy current standards for RTOs.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>