



Australian Government

Department of Education, Employment and Workplace Relations

AHCIRG501A Audit irrigation systems

Release: 1

AHCIRG501A Audit irrigation systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the process of collating and assessing system performance data, and compiling a system evaluation report including recommendations for improvements and defines the standard required to: compile data to compare the performance of the system with benchmarks; solve performance problems and recommend solutions; identify adverse impacts of irrigation system activities on the natural resource base of the irrigated area; identify environmental impacts of irrigation on the lower catchment; and use computer software for irrigation auditing.
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Application of the Unit

Application of the unit	This unit applies to irrigation system auditors.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Collect and collate all available data	1.1.Data on system performance is collated. 1.2.Data on environmental and Occupational Health and Safety (OHS) issues is collated. 1.3.Data on equipment supply and usage is collated. 1.4.Data on crop production is collated. 1.5.Data on water use and quality is collated. 1.6.Data on climatic trends is collated. 1.7.Data on physical and chemical properties of soil is collated.
2. Assess actual data against benchmarks, specifications and predictions	2.1.System performance is compared to system specifications and performance predictions. 2.2.Supply and stock use is compared to previous and estimated usage and costs. 2.3.Crop production is compared to previous and predicted production. 2.4.Water usage and quality is compared to past and predicted usage and quality. 2.5.Climatic information is compared to predicted trends. 2.6.Soil properties are compared to previous and predicted properties. 2.7.Production costs related to irrigation system are compared to previous and predicted costs. 2.8.Net profits are compared to past and predicted profits.
3. Compile a report of system evaluation	3.1.Report includes discussion of results of data analysis. 3.2.Indicators of good performance are isolated and discussed. 3.3.Indicators of poor performance are isolated and discussed. 3.4.Causes of deviations from performance specifications and requirements are examined. 3.5.Conclusions about irrigation system performance in relation to crop production and business performance are clearly stated. 3.6.Conclusions are supported by the data.
4. Recommend alterations to irrigation system to achieve performance	4.1.Recommendations are made to modify or eliminate causes of poor performance, or to enhance current performance.

ELEMENT	PERFORMANCE CRITERIA
improvement	

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analyse and organise data
- solve performance problems and recommend solutions
- identify adverse environmental impacts of irrigation system activities and recommend appropriate remedial action
- use computer software for irrigation auditing
- recommend relevant enterprise OHS and environmental procedures
- use literacy skills to fulfil job roles as required by the organisation. The level of skill may range from reading and understanding documentation to completion of written reports
- use oral communication skills/language competence to fulfil the job role as specified by the organisation including questioning, active listening, asking for clarification, negotiating solutions and responding to a range of views
- use numeracy skills to estimate, calculate and record complex workplace measures
- use interpersonal skills to work with others and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge

- evaluation procedures
- irrigation system performance indicators
- statistical data analysis procedures or software
- environmental impacts of irrigation systems using water from any ground or underground source
- relevant enterprise OHS legislation, codes of practice and enterprise requirements.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following:

- compile data to compare the performance of the system with benchmarks
- solve performance problems and recommend solutions
- identify adverse impacts of irrigation system activities on the natural resource base of the irrigated area
- identify environmental impacts of irrigation on the lower catchment
- use computer software for irrigation auditing.

Context of and specific resources for assessment

Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole.

Irrigation systems may include:

- pressurised irrigation systems such as micro-irrigation systems
- spray irrigation systems
- gravity fed irrigation systems.

Irrigation systems may range from:

- manual operation and monitoring to fully automated with computer control and monitoring.

RANGE STATEMENT

Benchmarks for audit may include:

- statistics and records from industry sources
- records/reports from other farms in the region (comparative analysis)
- meteorological records and reports
- reports from Regulatory Authorities.

Unit Sector(s)

Unit sector	Irrigation
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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