



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AHCIRG303A Measure irrigation delivery system performance**

**Release: 2**

## **AHCIRG303A Measure irrigation delivery system performance**

### **Modification History**

June 2012: minor edits to Range Statement to improve clarity and consistency with other AHCIRG Units.

### **Unit Descriptor**

This Unit covers the process of measuring pressures, flows and distribution uniformity of an irrigation system and defines the standard required to: apply measuring and testing techniques; measure pressures; flows and distribution uniformity of an irrigation system; calculate pressure differentials; flow rates and water usage; record and report system performance.

### **Application of the Unit**

This Unit is likely to be carried out under routine supervision within enterprise guidelines.

### **Licensing/Regulatory Information**

Not Applicable

### **Pre-Requisites**

Not applicable.

### **Employability Skills Information**

This Unit contains employability skills.

### **Elements and Performance Criteria Pre-Content**

Elements describe the essential outcomes of a Unit of Competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Measure <i>irrigation system</i> performance	1.1 System pressures are measured and recorded in accordance with Occupational Health and Safety (OHS) and enterprise policy and procedures 1.2 Variations in pressures are identified and recorded in accordance with enterprise policy and procedures 1.3 Water flow rates are measured and recorded in accordance with enterprise policy and procedures 1.4 Variations in water flow and distribution are identified and recorded in accordance with enterprise policy and procedures 1.5 Pump performance parameters are measured as necessary and recorded in accordance with enterprise policy and procedures 1.6 Variations in pump performance parameters are measured where relevant and recorded in accordance with enterprise policy and procedures 1.7 Distribution and delivery systems are inspected and malfunctions in system are identified, fixed and actions recorded in accordance with enterprise policy and procedures 1.8 Factors external to the system that may cause interference are identified and recorded in accordance with enterprise policy and procedures
2 Monitor supply of equipment and spare parts	2.1 Supply and part usage are recorded in accordance with enterprise policy and procedures 2.2 Spare parts meet demand 2.3 Purchases are within budget constraints 2.4 Parts requirements outside of budget constraints are reported 2.5 Purchases and orders are recorded in accordance with enterprise procedures and systems
3 Record and report system performance status	3.1 System pressures and variations are recorded in accordance with enterprise policy and procedures 3.2 System flow rates and variations are recorded in accordance with enterprise policy and procedures 3.3 Distribution uniformity and mean application rates are calculated and recorded in accordance with enterprise policy and procedures 3.4 Watering depth is determined and recorded in accordance with enterprise policy and procedures

## Required Skills and Knowledge

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

### Required skills include:

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#### Ability to:

- access and prepare data records for both print-based and computer-based data
- use computers for recording and reporting data
- identify adverse environmental impacts of irrigation activities and appropriate remedial action
- calculate pressure differentials, flow rates, crop yields, estimated water usage/actual water usage
- apply measuring and testing techniques
- implement and follow relevant enterprise OHS and environmental policies and procedures
- use literacy skills to read, interpret and follow organisational policies and procedures, follow sequenced written instructions, record accurately and legible information collected and select and apply procedures for a range of tasks
- use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning techniques, active listening, clarifying information and consulting with supervisors as required
- use interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

### Required knowledge includes

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#### Knowledge of:

- OHS guidelines
- soil water retention testing techniques
- measuring and monitoring procedures for factors contributing to irrigation system delivery
- water authority standards and procedures
- environmental impacts of irrigation, using water from any ground or underground source
- enterprise policies and procedures.

## Evidence Guide

<p>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.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this Unit	<p>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:</p> <ul style="list-style-type: none"> <li>• apply measuring and testing techniques</li> <li>• measure pressures, flows and distribution uniformity of an irrigation system</li> <li>• calculate pressure differentials, flow rates and water usage</li> <li>• record and report system performance.</li> </ul>
Context of and specific resources for assessment	<p>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.</p>

## Range Statement

<p>The range statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
<p><b>Irrigation systems</b> may include:</p>	<ul style="list-style-type: none"> <li>• low volume irrigation systems such as micro-irrigation</li> <li>• sprinkler irrigation</li> <li>• moving sprinkler irrigation</li> <li>• surface irrigation.</li> </ul>

## Unit Sector(s)

Irrigation