



Australian Government

Department of Education, Employment and Workplace Relations

AHCIRG419A Supervise surface irrigation maintenance

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This Unit covers the process of supervising a maintenance program for a surface irrigation system and defines the standard required to: develop maintenance procedures; supervise maintenance of irrigation components and structures; check and service testing equipment; supervise maintenance of the irrigation area; and record and report maintenance activities.

Application of the Unit

This Unit applies to irrigation site supervisors and managers who are responsible for the maintenance program for surface irrigation.

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 Develop a <i>maintenance program</i> for a <i>surface irrigation system</i>	1.1 Maintenance requirements for irrigation components and structures are established 1.2 Maintenance requirements for the irrigation site are established 1.3 The frequency of maintenance activities required are determined and a schedule is developed 1.4 Maintenance activities are costed out in terms of required staff, materials and equipment 1.5 OHS risks associated with the maintenance program are assessed and suitable controls implemented 1.6 The environmental impacts of maintenance activities are minimised 1.7 A system for reporting maintenance activities is developed
2 Supervise maintenance of surface irrigation components	2.1 Maintenance checklists are developed for irrigation components 2.2 Component operation is systematically monitored and operating faults are identified and appropriate action taken 2.3 Abnormal operation or frequent and recurring breakdowns are identified, investigated and maintenance organised as required 2.4 Situations requiring expert advice are identified and specialist assistance sought in accordance with site procedures 2.5 Equipment condition is routinely reviewed to ensure and maintain efficient operations
3 Supervise maintenance of surface irrigation structures	3.1 Maintenance checklists are developed for irrigation components 3.2 Structures are inspected as necessary to locate and evaluate defects 3.3 Appropriate repair methods are identified to ensure defect is repaired effectively 3.4 Structures are repaired or replaced according to requirements 3.5 Materials required for job are identified and organised as required to enable appropriate maintenance of components 3.6 <i>Testing equipment is maintained</i>
4 Supervise pest and weed control in an irrigated area	4.1 Evidence of pests is assessed and integrated control measures appropriate to type and species of infestation are determined 4.2 Areas of weed infestation on irrigation works are located and species identified 4.3 Integrated control methods are selected to control pests and weeds

- 4.4 Control methods are scheduled at the optimum time with minimal damage to desired plants
- 4.5 Severity of infestations and records of treatments are maintained
- 5 Complete records of irrigation system maintenance
 - 5.1 Records are maintained of maintenance activities
 - 5.2 Results of maintenance works are assessed against the maintenance program

Required Skills and Knowledge

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

Required skills include:

Ability to:

- develop enterprise procedures for pre-season, irrigation and post-season maintenance
- carry out control systems checks
- supervise minor repairs of equipment
- identify the need for, and schedule, major repairs or replacements
- maintain testing equipment
- identify pests and weeds in the irrigated area
- use pest and weed control strategies
- record all test results clearly and concisely with attention to detail
- dispose of unused or waste materials from site in an environmentally safe and sensitive manner
- collate records and analyse performance
- identify adverse environmental impacts of irrigation activities and appropriate remedial action
- implement and follow relevant enterprise OHS and environmental policies and procedures.

Required knowledge includes:

Knowledge of:

- irrigation system components
- operational and maintenance requirements
- pre and post-season maintenance covering:
 - system components
 - irrigation beds
 - pumping systems
 - drainage systems
 - head and tail water structures
- irrigation systems inspection
- irrigation equipment testing
- visual checks for blockages or signs of wear in gates and valves
- volume testing as per procedures
- environmental impacts of irrigation maintenance
- hazards and implement safe work 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>	
<p>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this Unit</p>	<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"> • develop maintenance procedures • supervise maintenance of irrigation components and testing equipment • supervise maintenance of irrigation structures • supervise maintenance of the irrigation area • record and report maintenance activities.
<p>Context of and specific resources for assessment</p>	<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

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.

<i>Maintenance programs</i> may include:	preventative maintenance carried out at end of season or throughout the irrigation season, including the regular replacement of irrigation components.
<i>Surface irrigation</i> may include:	systems that apply water across the surface of a levelled or contoured area. These include furrow, border and basin irrigation.
<i>Maintenance of testing equipment</i> may include:	replacing 'remove and replace' components; lubrication; working adjustments to tolerances; cleaning and storing; and completing usage records.

Unit Sector(s)

Irrigation