



Australian Government

AHCIRG422 Manage a moving sprinkler irrigation system

Release: 1

AHCIRG422 Manage a moving sprinkler irrigation system

Modification History

Release Number	TP Version	Comments
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to manage a moving irrigation system.

It applies to individuals who analyse information and exercise judgement to complete a range of 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. Ensure the moving sprinkler irrigation system is prepared for operation	1.1 Assess staff training needs for carrying out pre-start checks and routine servicing and arrange training for those that require it 1.2 Program or adjust the irrigation controller to meet the required schedule 1.3 Develop procedures for adjusting valves and checking filters and emitters
2. Develop and implement start-up and	2.1 Develop start-up procedures for a low volume irrigation system 2.2 Develop shut down sequence and isolation procedures

Element	Performance criteria
shutdown procedures	2.3 Install safety or security lock off devices and signage 2.4 Provide instructions for flushing the system as required
3. Carry out trouble shooting for faults and blockages	3.1 Arrange access to faulty components and blockages 3.2 Remove faulty components from the system and repair or dispose of in an environmentally responsible way 3.3 Select appropriate replaceable components and install
4. Measure performance of a moving sprinkler irrigation system	4.1 Identify and record variations in pressures 4.2 Measure and record water flow rates 4.3 Identify and record variations in water flow and distribution 4.4 Measure and record pump performance parameters as necessary 4.5 Measure and record variations in pump performance parameters where relevant 4.6 Inspect distribution and delivery systems and identify and fix malfunctions in system and record actions 4.7 Identify and record factors external to the system that may cause interference
5. Review system performance status	5.1 Record system pressures and variations 5.2 Record system flow rates and variations 5.3 Calculate and record distribution uniformity and mean application rates 5.4 Determine and record watering depth 5.5 Calculate energy use and water efficiency and compare to industry benchmarks

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 AHCIRG422A Manage a moving sprinkler irrigation system.

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 AHCIRG422 Manage a moving sprinkler irrigation system

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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:

- develop and supervise procedures for starting up, carrying out operational checks and shutting down
- measure, interpret and adjust flow rates and pressures
- measure output and efficiency of an irrigation system
- monitor system effectiveness:
- application rates
- depth of irrigation
- infiltration and runoff
- irrigation times
- pressure variations and blockages
- salinity levels and water quality
- soil moisture levels
- sprinkler coverage and output
- use records to review an irrigation system

Knowledge Evidence

The candidate must demonstrate knowledge of:

- best practices for reducing environmental impacts of irrigation
- component specifications
- critical measures for moisture availability:
- field capacity
- readily available water
- wilting point
- energy efficiency indicators/ benchmarks for moving sprinkler irrigation:

- Application Efficiency
- Average Application Rate
- Instantaneous Application Rate
- environmental hazards of runoff and compaction
- environmental impacts of irrigation using water from any ground or underground source
- general irrigation methods for moving sprinkler systems
- irrigation schedules
- main components of moving sprinkler irrigation systems
- monitoring soil compaction and drainage
- moving sprinkler irrigation technologies
- physical soil characteristics such as infiltration rate, water holding capacity and wetted volume in the root zone
- pump types used in moving sprinkler irrigation systems and their output and efficiency ratings
- pump types used in moving sprinkler irrigation systems and their operation
- servicing and maintenance of travelling mechanism
- soil moisture testing techniques
- soil, plant and water relationships
- water requirements of plants/crops consistent with sound environmental management

Assessment Conditions

Assessors must satisfy current standards for RTOs.

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