Modification history

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| Release | Comments |
| Release 1 | This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 4.0. |

| AHCIRG340 | Install irrigation pumps |
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| Application | This unit of competency describes the skills and knowledge required to plan and sequence installation tasks, source, install and commission pump and flow control components, and complete irrigation pump installation.  The unit applies to individuals who install irrigation pumps under broad direction and take responsibility for their own work.  No licensing, legislative or certification requirements apply to this unit at the time of publication. |
| Prerequisite Unit | Nil |
| Unit Sector | Irrigation (IRG) |

| Elements | Performance Criteria |
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| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Plan and sequence installation tasks from instructions | 1.1 Obtain drawings and specifications  1.2 Plan and sequence tasks  1.3 Select required tools and equipment and check for safe operation |
| 2. Source irrigation system requirements | 2.1 Select, fit and use appropriate PPE 2.2 Determine location of pump  2.3 Identify pump base requirements  2.4 Identify, order and collect materials and equipment  2.5 Check materials and equipment for acceptable condition and compliance |
| 3. Install and commission pumping and flow control components | 3.1 Set out and construct pump base  3.2 Install pump and pump controls  3.3 Connect suction and discharge lines and flow control devices  3.4 Connect delivery and distribution components to pump  3.5 Conduct pressure testing of pumping system  3.6 Adjust and set flow control devices  3.7 Test pump |
| 4. Complete work | 4.1 Clear work area and dispose of, reuse or recycle materials  4.2 Clean, check, maintain and store tools and equipment  4.3 Restore work site to meet environmental requirements  4.4 Complete documentation |

| Foundation Skills  This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria. | |
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| Skill | Description |
| Reading | * Interpret textual information from a range of sources to identify relevant and key information about workplace operations |
| Writing | * Document pump installation and commissioning activities |
| Numeracy skills | * Measure pump base area |
| Navigate the world of work | * Recognise and follow workplace requirements, including safety requirements, associated with own role and area of responsibility |

| Range Of Conditions  This section specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. | |
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| Flow control devices must include at least two of the following: | * pressure switches * constant flow switches * variable speed drives. |

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| Unit Mapping Information | | | |
| Code and title current version | Code and title previous version | Comments | Equivalence status |
| AHCIRG340 Install irrigation pumps | AHCIRG309 Install irrigation pumps | Performance criteria clarified  Foundation skills added  Assessment requirements updated | Equivalent unit |

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| Links | Companion Volumes, including Implementation Guides, are available at VETNet:  <https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72> |

| TITLE | Assessment requirements for AHCIRG340 Install irrigation pumps |
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| Performance Evidence | |
| An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit. There must be evidence that the individual has installed irrigation pumps on at least one occasion, and has:   * followed drawings and specifications * performed work-related calculations * handled materials safely * organised equipment and materials for installation work * matched pump output and flow rate to pipe diameter * set out and prepared the site * positioned pumps and control devices * used power tools and hand tools * primed and operated pumps * fixing and joining techniques * identified and responded to operational problems * monitored the performance of pumps * adjusted and set pressure switches and air tanks to suit pump performance and site conditions. | |

| Knowledge Evidence |
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| An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:   * basic principles of hydraulics, flow versus pressure, energy loss due to friction * discharge and flow rates * installation procedures for irrigation pumps * pump components and their principles of operation * pump gauges and controls * advantages and disadvantages of each pump type * servicing requirements for pumps * types of pumps and their application in irrigation, such as centrifugal, vertical turbine, submersible and propeller * types of pumps suitable as booster and floating pumps * characteristics and application of different valves, pipes and fittings, including fixing and joining techniques and methods * impellers, rotors and stators * types of valves * properties of water, including pressure and flow rates * pump performance and pressure testing * automatic pump switches, including timers, pressure switches, constant flow switches and variable speed drives. |

| Assessment Conditions |
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| Assessment of skills must take place under the following conditions:   * physical conditions: * a workplace setting or an environment that accurately represents workplace conditions * resources, equipment and materials: * work instructions and workplace procedures applicable to installing irrigation pumps * irrigation pump operation and maintenance manual * irrigation pump installation equipment * personal protective equipment applicable to installing irrigation pumps * specifications: * irrigation pump installation tools and equipment and procedures * recording procedures * timeframes: * according to job requirements.   Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards. |

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