



Australian Government

AHCPER309 Install and maintain permaculture water systems

Release: 1

AHCPER309 Install and maintain permaculture water systems

Modification History

Release	TP Version	Comment
1	AHCv1.0	Initial release

Application

This unit provides the skills and knowledge to install and maintain permaculture water systems, organise resources for installation work, set out and prepare site, install water system components, complete installation work, commission water system systems and communicate with work team members, supervisors, contractors and consultants.

All work is carried out to comply with workplace procedures.

This unit applies to individuals who work under broad direction and take responsibility for their own work including limited responsibility for the work of others. They use discretion and judgement in the selection and use of available resources and complete routine activities.

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

Permaculture (PER)

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. Organise resources for installation work	1.1 Identify the construction site and construction method for the permaculture water system according to the permaculture plan 1.2 Select materials, tools, equipment and machinery, water storage, movement and filtering systems according to the permaculture design requirements 1.3 Check parts and equipment delivered to the site according to

Element	Performance criteria
	system drawings and specifications on the permaculture plan 1.4 Check water supply to ensure that it is compatible with system specifications 1.5 Carry out pre-operational and safety checks on tools, equipment and machinery according to manufacturer's specifications 1.6 Select, use and maintain suitable safety and personal protective equipment
2. Set out and prepare site	2.1 Measure and mark out permaculture water system lines or lay out in accordance with the permaculture plan 2.2 Dig trenches, where required, at the specified depth without damage to services, facilities, features and established plants 2.3 Ensure that equipment operation and work practices conform with OHS requirements 2.4 Observe any regulations and legislative requirements relevant to the situation 2.5 Consider the needs of other stakeholders while setting out and preparing the site for permaculture water systems
3. Install permaculture water systems	3.1 Interpret the permaculture plan and, where applicable, supervise and monitor work by contractor 3.2 Assemble and connect parts of irrigation systems, where used, according to manufacturer's specifications and the permaculture plan 3.3 Install and adjust pump fittings and valves, where used according to manufacturer's specifications and the permaculture plan 3.4 Maintain a clean and safe work area while installation work is carried out 3.5 Check that works can be carried out without a licensed plumber and direct work to licensed individuals where required.
4. Complete installation work	4.1 Finish off earthworks to permaculture plan specifications 4.2 Check the system configuration and capacity matches the installation plan 4.3 Remove or dispose of waste material from the site, and restore site to original state in an environmentally aware and safe manner 4.4 Clean, maintain and store tools, equipment and machinery
5. Commission permaculture water systems	5.1 Prime, start up and flush irrigation and pump systems, where installed, in accordance with the operation manual 5.2 Identify and correct any operating faults according to operations manual 5.3 Test, calibrate and monitor equipment, where used, according

Element	Performance criteria
	to manufacturer's specifications 5.4 Record or report work outcomes, where appropriate
6. Monitor and maintain permaculture water systems	6.1 Regularly check permaculture water systems and monitor for optimum performance 6.2 Carry out routine maintenance procedures on permaculture water systems 6.3 Carry out repairs on permaculture water systems as required 6.4 Install erosion and sediment control measures, if required, in accordance with manufacturer's recommendation and the permaculture plan

Foundation Skills

Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Unit Mapping Information

New unit - equivalent to QLD843WAT09C.

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 AHCPER309 Install and maintain permaculture water systems

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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:

- organise resources for installation work
- set out and prepare site
- install permaculture water systems materials and components, excluding works requiring a licensed plumber.
- commission a permaculture water system
- monitor and maintain permaculture water systems
- communicate with work team members, supervisors, contractors and consultants

Knowledge Evidence

The candidate must demonstrate knowledge of:

- permaculture practices regarding water including natural flows, rainwater and wastewater, storage, movement and retention of water in the system
- permaculture water systems, such as:
 - swales
 - contour banks
 - terraces
 - mulch-pit paths
 - diversion channels and other passive installations
 - mains pressure systems
 - low pressure or gravity systems
 - below-ground systems
 - above-ground systems
 - spray, dripper and capillary irrigation systems

- water tanks
- guttering and first-flush diversion system
- water supply components, such as:
 - mains
 - dam
 - bore
 - windmill
 - tank
 - channel
- understanding of contours
- installation methods and techniques for permaculture water systems
- components of permaculture water systems
- characteristics and operation of joints, valves and sprinkler components
- operation of pumps and water flow rates
- behaviour of water on varying terrain and soil types
- soil water retention testing techniques
- water quality and water filtration techniques
- calculations for installing permaculture water systems
- soil characteristics
- regulations and legislative requirements, such as:
 - permits for pruning or removal of large trees
 - connecting to water systems
 - licences for operating specialised machinery, such as chainsaws, skid steer loaders and forklifts
 - setting up traffic and pedestrian barriers
 - digging near services (phone, gas, power, water, sewerage and drains)
 - installing dams or diverting water in catchments
 - installing tanks
 - planning acts and codes
 - earth movement and digging guidelines and legislation
 - environmental legislation
 - land restoration codes
 - water conservation guidelines and legislation
 - soil movement regulations
 - habitat and wildlife protection legislation

Assessment Conditions

Assessors must satisfy current standards for RTOs. Assessors must also hold a nationally accredited Certificate III (or higher) in Permaculture. Completion of a Permaculture Design Course (PDC) is not sufficient at this level.

Links

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