



Australian Government

MSS024015 Apply an understanding of environmental principles to a site

Release: 1

MSS024015 Apply an understanding of environmental principles to a site

Modification History

Release 1. Updated unit code. Changes to performance criteria. Range of conditions removed. Assessment requirements amended. Equivalent outcome.

Application

This unit describes the skills and knowledge to read the landscape in terms of the physical and biological components of the environment and the ecological linkages in operation at a site. Personnel are required to apply basic principles of geomorphology, hydrology and ecology in a systematic, scientific appraisal of site condition. This requires sufficient knowledge of chemistry, physics, geology and biology to support a scientific approach to field ecology.

This unit of competency is applicable to environmental technicians working in a range of industry sectors, such as environmental monitoring, and sampling; environmental compliance, auditing and inspection; groundwater and clean water; water treatment, storm and wastewater management; solid and hazardous waste management; site remediation; management of contaminated sites; geotechnical services and civil engineering; and natural resource management.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil

Competency Field

Environmental monitoring

Unit Sector

Environmental

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Prepare for site inspection

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| 1.1 | Read and use maps, photos and related documentation to gain a preliminary understanding of site features |
| 1.2 | Collect site-specific or regional data on expected flora, |

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	fauna, soils and climate
	1.3 Access and read site history and previous environmental or ecological studies
	1.4 Access and read all emergency plans, risk assessments, and safety and environmental management requirements associated with the field activities
	1.5 Access and read legislative and planning instruments applicable to current and future site usage
	1.6 Confirm site access requirements and identify potential site hazards
2 Conduct initial site survey	2.1 Sketch, map or photograph the site
	2.2 Observe and record the surface geology and geomorphology of the site
	2.3 Observe and record hydrology of the site
	2.4 Observe and record the major flora of the site
	2.5 Observe and record evidence of site fauna
	2.6 Observe and record infrastructure and other modifications to the site
	2.7 Assess the potential for presence of cultural and indigenous heritage items and record findings
	2.8 Check for evidence of illegal or inappropriate activities
3 Make an initial assessment of site condition	3.1 Use geomorphological and hydrological observations to describe surface condition and infer potential future impacts
	3.2 Make inferences on apparent ecological health of the site to plan for an initial ecological study of the site
	3.3 Determine the physical, chemical and biological parameters that would need to be measured and sampled

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	during subsequent ecological appraisal of the site
4 Prepare for field study	4.1 Identify and describe the biological and chemical components of interest, sampling areas and field techniques to be used 4.2 Identify, obtain and check required equipment and materials required for field study 4.3 Securely stow all field equipment in vehicle to prevent damage in transit 4.4 Safely transport all field equipment to site and prepare it for use
5 Perform a basic ecological field study of the site	5.1 Perform ecological sampling for abundance and diversity parameters using the general techniques of transects and quadrats 5.2 Record descriptions of the habitat structure 5.3 Perform sampling for simple population, demographic and age structure parameters 5.4 Perform simple sampling and measurements on abiotic components 5.5 Perform simple targeted species sampling 5.6 Comply with legislation, policy, codes of practice and accepted workplace procedures
6 Finalise field study	6.1 Store all samples and data safely 6.2 Rehabilitate sampling sites to render them safe and minimise environmental impacts 6.3 Clean all equipment, containers, work area and vehicles according to workplace procedures 6.4 Pack and safely transport all samples, equipment and

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		supplies back to home base	
		6.5	Ensure dispatch of collected samples for subsequent analysis
		6.6	Check serviceability of all equipment before storage
7	Process and present field data	7.1	Summarise field data using simple calculations, graphs, tables and maps
		7.2	Write reports that include simple conclusions and interpretations based on raw or summarised data
8	Maintain a safe work environment	8.1	Use defined safe work practices and personal protective equipment (PPE)
		8.2	Minimise the generation of waste
		8.3	Collect and dispose of all hazardous wastes safely

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS024003 Apply an understanding of environmental principles to a site.

Links

The MSS Sustainability Companion Volume implementation Guides are available from VETNet: -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS024015 Apply an understanding of environmental principles to a site

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- planned and conducted at least 1 site appraisal that involves an initial survey and assessment of site condition and a basic ecological field study.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- scientific terminology for environmental and ecological systems relevant to job role
- fundamental concepts and principles in chemistry, physics, geology and biology to support a scientific approach to basic field ecology, including:
 - structure of earth systems, including lithosphere, hydrosphere, atmosphere and biosphere (ecosphere)
 - geomorphology, climate and hydrology
 - energy and material flows and cycles, including biogeochemical cycles
- fundamentals of ecology, including:
 - ecosphere, biome and major ecosystem types
 - trophic structure of ecosystems, and hierarchies
 - organism, population, community, ecosystem hierarchy; habitat and biodiversity
 - abiotic and biotic components and their interrelationships and dependencies
 - ecological systems and dynamics; stability, succession and disruption
- specific legislation, policies and codes of practice related to ecological field activities
- ecological, chemical and physical field monitoring procedures relevant to job role
- procedures for maintaining, storing and transporting samples and specimens to ensure their wellbeing, viability and integrity
- site hazards; health, safety and environment requirements, including field safety and survival principles.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of facilities, equipment and resources, including:
 - access to sites and vehicle transport
 - survey equipment, sampling and monitoring equipment, cameras, consumables, maps and flora and fauna keys
 - documentation, including site information, environmental management plans, codes of practice and field protocols, equipment manuals, workplace procedures and test or survey methods.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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