



Australian Government

MSS024032 Document simple geological information for a site

Release: 1

MSS024032 Document simple geological information for a site

Modification History

Release 1. Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed. Supersedes and is not equivalent to MSS024020 Recognise common geological landforms and samples.

Application

This unit describes the skills and knowledge required to recognise, interpret and document geological landforms and related geological and ecosystem interactions of a site.

This unit applies to environmental technicians and similar roles who are required to recognise common geological landforms and relate these to basic geological processes and other ecosystem components of a site, obtain and classify near surface samples of common rocks, minerals and soils and identify factors that can affect site revegetation or rehabilitation.

This unit applies in a range of industry sectors including but not limited to environmental services; environmental compliance, auditing and inspection; groundwater and clean water management; solid and hazardous waste management; management of contaminated sites; site remediation or rehabilitation; 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 and technology

Unit Sector

Not applicable

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for field work	1.1 Review job request to identify the equipment involved, samples to

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	be collected and test methods 1.2 Identify hazards associated with the site, test methods and equipment used and read safe work procedures to determine action to be taken 1.3 Confirm site location, access, timing and any client requirements 1.4 Assemble all required equipment and materials and check that they are fit for purpose 1.5 Stow equipment and materials to ensure their safe transport 1.6 Arrange transport to site 1.7 Liaise with relevant personnel on arrival at site to ensure safety and minimise disruption to others 1.8 Seek input from colleagues and/or manager/s to confirm understanding of work requirements
2. Recognise geological structures and processes	2.1 Recognise common landforms and related geological processes 2.2 Read and interpret simple geological maps, diagrams and aerial photos to identify topography and geological structures 2.3 Apply principles of geological processes and the geological timescale to explain the formation and occurrence of common rocks, minerals, soils and aquifers
3. Identify common rocks and minerals	3.1 Sort handheld specimens of common sedimentary, igneous and metamorphic rocks by observing their textural, structural and mineralogical properties 3.2 Identify handheld specimens of common rocks and minerals by comparing their physical properties with classification charts and tables
4. Identify common soil types and their properties	4.1 Obtain soil samples using specified sampling equipment and methods 4.2 Examine soil colour, texture and properties of soil components to classify common soils 4.3 Identify and describe simple soil profiles at field sites 4.4 Recognise influences of rock type, drainage, age and climate on development of soil profiles 4.5 Recognise common forms of soil degradation
5. Relate local geology to flora and fauna and	5.1 Interpret and describe sites in terms of basic relationships between parent material, climate, topography, soils and living ecosystem

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land use	components 5.2 Recognise how local geology and relationships can influence the revegetation and rehabilitation of sites
6. Maintain a safe work environment	6.1 Use safe work procedures and protective equipment to ensure personal safety and that of others 6.2 Minimise environmental impacts of sampling and/or testing and generation of waste 6.3 Collect and/or dispose of all waste in accordance with environmental and quarantine requirements and workplace procedures
7. Report data and finalise documentation	7.1 Report field data in the required formats and expected time frame 7.2 Complete all required documentation 7.3 Maintain the security and confidentiality of data and documentation in accordance with workplace requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret job requests, workplace procedures, sampling and test methods
- Writing skills to record data and observations
- Oral communication skills to liaise with site personnel
- Numeracy skills to take readings and measurements.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. No equivalent unit.

Links

Companion Volume Implementation Guides are found in VETNet -

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

Assessment Requirements for MSS024032 Document simple geological information for 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 demonstrated the ability to:

- for at least 2 sites:
 - document simple geological information
 - identify at least 2 specimens of rock or minerals
 - classify at least 2 soil samples
 - identify geological factors that can affect site revegetation and rehabilitation.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- structure of the earth's core, crust and major components
- geomorphology and landforms, including agents of erosion and transportation, stability of rocks and minerals in different environments and depositional processes
- regolith, including physical and chemical weathering, climatic effects, stability of minerals, weathering processes, soil formation, common soil types and composition
- rock cycle
- fundamentals of:
 - igneous rocks, including origin of magma, movement of magma, volcanic, plutonic, types of volcanoes and simple tectonic setting
 - sedimentary rocks, including clastic, chemical, organic types, grain size and composition, sorting, roundness, lithification, sedimentary structures and environments of deposition
 - metamorphic rocks, including regional, contact, dynamic metamorphic zones, rock textures and fabrics
- structural geology concepts including folds, faults, tilts and uplifts
- overview of geological time, including eras, periods, relative time, stratigraphic methods for establishing relative ages of strata, and radiometric dating
- fundamentals of palaeontology, including preservation of fossils and their role in dating strata
- links between local geology, climate, topography and living components of ecosystems

- equipment commonly used to collect soil and handheld rock samples
- geological sampling and in-field test methods routinely used in job role, including:
 - pre-use checks and safe operating procedures for sampling and test equipment
 - sampling procedures
 - purpose, principles and measurement steps of testing
 - calculation steps to provide results
 - expected values for sample type
- common site hazards and control measures
- 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:
 - maps, photos, diagrams of site
 - classification charts and tables for rocks, minerals and soils
 - relevant survey, sampling and testing equipment and methods
- modelling of industry operating conditions, including:
 - access to site/s.

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

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