Australian Government

Department of Education, Employment and Workplace Relations

RIIEGS202B Conduct field work

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the conduct of field work in the metalliferous mining industry. It includes carrying out survey and pilot results; designing, plotting and laying out grids; reading and using maps; and locating tenement marks. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

Application of the Unit

This unit is appropriate for those working in an assistant role at worksites within:

- Metalliferous mining

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Carry out survey and plot results	1.1. Access, interpret and apply ***compliance documentation*** relevant to the work activity 1.2. Carry out surveys using relevant ***survey equipment*** 1.3. Conduct ***reconnaissance*** survey of the field 1.4. Locate ***reference pegs*** where available
2. Design, plot and lay out a grid	2.1. Design a grid from ***supplied information*** 2.2. ***Plot grid*** to scale 2.3. Mark baseline and grid datum mark-up pegs with eastings and northings 2.4. Lay out grid using ***plotting*** techniques
3. Read and use maps	3.1. Identify the sources of ***maps*** 3.2. Identify the types and features of ***maps*** used for mineral exploration fieldwork 3.3. Maintain map storage system 3.4. Calculate scales and distances between points 3.5. Calculate bearings relative to true, magnetic, grid and local north
4. Locate mining tenement marks	4.1. Refer to state and federal agencies for information relevant to mining tenements to determine the types of mining tenements and their purpose 4.2. Draw scale maps of mining tenement to statutory regulations 4.3. Obtain and complete forms required to obtain mining tenements to statutory requirements for lodging, and lodge with relevant agencies/authorities 4.4. Mark out, or locate and maintain mining tenement marks to statutory requirements, using ***Global Positioning System*** (***GPS***)

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the performance criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following as required to conduct field work:

- apply legislative, organisation and site requirements and procedures
- draft and sketch/use surveying instruments
- solve problems
- use PC software for data collection and analysis
- use field testing and measurement instruments/equipment

Required knowledge

Specific knowledge is required to achieve the performance criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following as required to conduct field work:

- field surveying methods
- types and features of maps
- use and reading of maps
- calculation of scales, distances and bearings
- laying out of grids
- plotting techniques
- mining tenement legislation and requirements
- marking out of mining tenements
- Global Positioning Systems (GPS)
- types of GPS and DGPS/operation of GPS and functions
- satellite coverage
- waypoint generation
- datum conversion
- AMG and latitude/longitude
- track logging

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for the conduct of field work • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the conduct of field work • working with others to undertake and complete the conduct of field work that meets all of the required outcomes • consistent timely completion of the conduct of field work that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery

	environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.

Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods:
	• written and/or oral assessment of the candidate's required knowledge
	• observed, documented and/or first hand testimonial evidence of the candidate's:
	  • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes
	  • consistent achievement of required outcomes
	• first hand testimonial evidence of the candidate's:
	  • working with others to undertake and complete the conduct of field work

Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Relevant compliance documentation may include:	• legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • Employment and Workplace Relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Surveying equipment may include:	• tape • compass • optical square • staff and bubbles • theodolite • GPS
Reconnaissance survey may include:	• checking access • collecting soil and rock samples • grid-layout • magnetic bearings • geo-physical • Global Positioning System (GPS) • travel times • type of terrain • vegetation types
Field information may be obtained from:	• air photos • topographical maps • satellite imagery
Field site grid may cover:	• rock outcrops • streams and rivers • road cuttings • potential ore deposits
Reference pegs may be put in place by relevant Lands Departments and can be used to tie the local grid to the National Grid,	

to sea level datum and to obtain coordinates for GPS system	
Supplied information may include:	• stike of rocks • line spacing • sample spacing • environmental issues • budget constraints
Plotting a grid may include:	• plotting to scale drawn to local grid North • calculating and drawing true North • calculating and drawing magnetic North • calculating and drawing grid North • assigning eastings and northings
Maps may include:	• topographical • geological • cadastral • mining tenement • orthophotomaps • geomagnetic maps • mineral field and district boundary maps
Global Positioning System (**GPS**) **may** be described as: 'a system which is able to show a person's exact position on Earth at anytime, anywhere, and in any weather. It is operated by GPS satellites orbiting the Earth; being monitored continuously at ground stations located around the world. The satellites transmit signals that can be detected by anyone with a GPS receiver' (The Aerospace Corporation, 2003)	

Unit Sector(s)

Exploration and Field Work

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.