



Australian Government

Department of Education, Employment and Workplace Relations

RIIMEX601A Plan pit development

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the planning of pit development in the coal and metalliferous mining and extractive industries. It includes: determining the design parameters and strategies; preparing pit development strategic plan; and initiating, monitoring and adjusting the implementation of the pit development.

Application of the Unit

This unit is appropriate for those working in a management or technical specialist roles, within:

- Coal mining
- Extractive industries
- 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

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<p>1. Determine pit design parameters and strategies</p>	<p>1.1. Access, interpret and apply compliance documentation relevant to planning pit development</p> <p>1.2. Identify, interpret and clarify relevant site geological, geotechnical, hydrogeological, hydrological, and survey data and use it to development and document the pit design and development parameters and strategies</p> <p>1.3. Identify, interpret and clarify relevant site marketing information and use it to development and document pit design and development parameters and strategies</p>
<p>2. Prepare pit development strategic plan</p>	<p>2.1. Involve internal and external stakeholders in the planning process in a way that uses their contribution effectively and gains their support for the outcomes</p> <p>2.2. Design the final pit profile based on the production requirements, costs, geological and survey data and relevant compliance documentation</p> <p>2.3. Design staged development of the pit based taking into account all the relevant pit design and development parameters and strategies</p> <p>2.4. Prepare contingency plans that provide optional strategies in the event changed circumstances</p> <p>2.5. Select and document the extracting method or methods to be applied based on the resource characteristics, pit development parameters and economic considerations</p> <p>2.6. Determine and document resource implications of the plan and strategies for their acquisition and use</p> <p>2.7. Identify and arrange any training required for personnel involved in the pit development and operations</p> <p>2.8. Develop and document record and reporting requirements and procedures for the monitoring of the pit development and operations</p> <p>2.9. Prepare and present the pit development</p>

	business plan/budget, including contingency plans
3. Initiate, monitor and adjust the implementation of the pit development	<p>3.1. Issue and explain the pit strategic plan to team members and others involved, for the safe, effective and efficient implementation of the pit development</p> <p>3.2. Provide timely ongoing support and advice to those implementing the pit development</p> <p>3.3. Ensure records and reports are maintained and issued in accordance with the parameters and strategy requirements and other relevant requirements</p> <p>3.4. Monitor the pit development performance against the strategic plan's parameters, strategies and budget; resolve anomalies in consultation with relevant stakeholders; and issue appropriate instructions for adjustments to the plan and/or its implementation</p>

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 in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to plan pit development:

- apply legislative, organisation and site requirements and procedures
- interpret and apply:
 - legislative requirements
 - organisational requirements
 - geological, geotechnical, hydrogeological data
 - hydrological data
 - survey data
 - marketing data
- interpret approvals licence conditions
- apply processes to set targets
- apply procedures for incorporating extraction methods, material transportation and storage systems into pit plan
- provide team leadership
- apply procedures for selecting development strategies
- apply procedures for selecting plant and equipment
- apply procedures for developing and initiating development plans
- interpret and apply operational performance data

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to plan pit development:

- legislative and organisation risk, statutory compliance, health, safety, environmental, quality and communication requirements and procedures
- geological, geotechnical, hydrogeological data
- hydrological data
- survey data
- marketing information
- mining and transportation methods
- pit development parameters
- pit development options and procedures
- consultative and coaching techniques
- team leadership techniques
- operational techniques required for execution of the plan

- plant and equipment capabilities
- work planning techniques
- recording and reporting systems
- work monitoring methods
- training systems
- emergency response and evacuation planning processes and techniques

Evidence Guide

<p>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.</p>	
<p>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>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:</p> <ul style="list-style-type: none"> • knowledge of the requirements, procedures and instructions for the planning of pit development • implementation of procedures and techniques for the safe, effective and efficient completion of pit development plans • the identification of the relevant information and scope of the work required to meet the required outcomes • the identification of viable options and the selection of pit development options that best meet the required outcomes • working with others to undertake and complete the planning and implementation of pit development • consistent and timely completion of pit development plans and their implementation
<p>Context of and specific resources for assessment</p>	<ul style="list-style-type: none"> • 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. • 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

	<p>environment to sensitively accommodate cultural diversity.</p> <ul style="list-style-type: none"> • Aboriginal people and other people from a non English speaking background may have second language issues. • Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances. • 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.
<p>Method of assessment</p>	<p>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:</p> <ul style="list-style-type: none"> • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • implementation of appropriate procedures and techniques for the safe, effective and efficient achievement of the required outcomes • identification of the relevant information and scope of the work required • identification of viable options and the selection of pit development options that best meet the required outcomes • consistently achieving the required outcomes • first hand testimonial and documentary evidence of the candidate's: <ul style="list-style-type: none"> • working with others to undertake and complete pit development plans • consistent and timely gaining of approval of pit development plans • provision of clear, timely required support and advice on the implementation of pit

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

Range Statement

<p>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.</p>	
<p>Relevant compliance documentation may include:</p>	<ul style="list-style-type: none"> • legislative, organisation and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • codes of practice • Employment and Workplace Relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
<p>Geological data may include:</p>	<ul style="list-style-type: none"> • limits of the deposit • coal quality variations • rock (or other resource) types and characteristics • ore, coal, overburden, inter seam thickness/properties • faults and joints • water tables or other water sources • partings or inter seams
<p>Geotechnical data may include:</p>	<ul style="list-style-type: none"> • material strengths • weak planes • stresses • rock mass strength • failure mode analysis
<p>Hydrogeological data may include:</p>	<ul style="list-style-type: none"> • groundwater • artesian water
<p>Hydrological data may include:</p>	<ul style="list-style-type: none"> • rainfall • surface water • catchment areas • runoff characteristics • springs • existing streams, bores and dams
<p>Survey data may include:</p>	<ul style="list-style-type: none"> • site and neighbouring land form • site and neighbouring boundaries and structures

	<ul style="list-style-type: none"> • site and neighbouring roads and other infrastructure • approved limits of extraction • title details • blasting layouts • earth movement surveys
Pit design and development parameters may include:	<ul style="list-style-type: none"> • limits of extraction due to licence constraints, economics, resource • minimum operating distances from other operations or neighbouring structures or land use • raw feed requirements to meet product needs • raw feed blending requirements • annual extraction or sales limitations • environmental works • product specification • processing plant location • haulage requirements • land clearance • stripping and stockpiling soil • progressive and final rehabilitation requirements • final landform and use • maximum instantaneous charge • bench heights, and safe slopes • water management requirements
Marketing information may include:	<ul style="list-style-type: none"> • product specifications • sales volumes
Internal and external stakeholders may include:	<ul style="list-style-type: none"> • site and offsite employees • contractors • customers • equipment suppliers • geologists, surveyors and/or draughtspersons • regulatory authorities representatives • community representatives • site neighbours
Changed circumstances may include:	<ul style="list-style-type: none"> • changed market conditions or requirements • variations in the raw feed requirements • changed geotechnical conditions • accident
Resources may include:	<ul style="list-style-type: none"> • financial

	<ul style="list-style-type: none">• labour• materials• services• equipment• computer models• plan preparation
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Unit Sector(s)

Materials Extraction

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.