

Draft 0.1

This is a draft update to CPPSIS6034 Conduct mining geology operations:
<https://training.gov.au/Training/Details/CPPSIS6034>.

Code changed to CPPSUR6034.

Changed PCs to active voice.

Changed 'person' to 'candidate' in PE for consistency.

Range of Conditions added to Knowledge Evidence.

I've added mapping info.

TAG will need to reassess this as unit is redeveloped.

Unit of Competency

CPPSUR6034 Conduct mining geology operations

Modification history

| Release | Comments |
|---------|---|
| 1 | Replaces superseded equivalent CPPSIS6034A Conduct mining geology operations. This version first released with CPP Property Services Training Package Version 3. |
| | Replaces superseded equivalent CPPSIS6034 Conduct mining geology operations |

Application

This unit specifies the skills and knowledge required to conduct mining geology operations. The unit covers analysing organisational priorities and specifications to identify projects; and planning projects to identify and document factors, such as objectives, deliverables, risks, constraints and equipment requirements, in order to comply with regulations and legislation applicable to the mining industry.

The unit also covers analysing mining geology to assess and recognise geological aspects of possible ore deposits, rock types and structures, and levels of rock stability and ground support; using surveying techniques to take measurements and reduce and manipulate spatial data to assist in analysing the geology of the mining operation. The unit requires the ability to implement project management activities relating to scheduling, measuring, recording, monitoring and reporting work progress. It also requires the ability to evaluate project activities and outcomes for compliance with specifications. It requires knowledge of underground mining and mining geology operations.

The unit supports surveyors of mine geology who work in a surveying team in a mining environment.

Licensing, legislative, regulatory or certification requirements apply to this unit in some States where mining surveying must be undertaken under the supervision of a registered surveyor. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Prerequisite Unit

None

Unit Sector

Surveying and spatial information services

Elements and Performance Criteria

| | |
|-------------------------------|---|
| 1. Identify and plan project. | 1.1 Determine organisational priorities to identify project objectives and specifications. 1.2 Present project specifications to appropriate persons. 1.3 Plan and document project objectives, deliverables, constraints, environmental considerations and work activities according to organisational requirements. 1.4 Detail mining regulations with regard to management and safety according to legislative and organisational requirements. 1.5 Select and check equipment to ensure correct operation and functionality according to organisational requirements. |
| 2. Analyse mining geology. | 2.1 Identify geological aspects of possible ore deposits by assessing the environment, and verify information. |

| | |
|----------------------|---|
| | <p>2.2 Identify and analyse rock types and structures fundamental to mining operations according to project specifications.</p> <p>2.3 Observe levels of rock stability and ground support requirements according to project specifications.</p> <p>2.4 Identify and analyse ore and minerals fundamental to mining operations according to project specifications.</p> <p>2.5 Identify and analyse methods for obtaining ore and mineral samples according to project specifications.</p> <p>2.6 Conduct measurements and reduce and manipulate spatial data according to project specifications.</p> |
| 3. Manage project. | <p>3.1 Implement project management mechanisms to schedule, record and report progress of activities in relation to agreed timeframes and plans.</p> <p>3.2 Implement and maintain agreed communication processes between client and other appropriate persons.</p> <p>3.3 Identify and analyse pertinent legal and statutory requirements and standards to ensure compliance.</p> <p>3.4 Devise and follow risk management and contingency strategies to ensure project complies with legal and statutory standards and organisational requirements.</p> <p>3.5 Identify and resolve problems and manage contingencies and constraints according to organisational requirements.</p> |
| 4. Finalise project. | <p>4.1 Evaluate mining geology project for compliance with project specifications and organisational requirements.</p> <p>4.2 Notify appropriate persons of project results according to organisational requirements.</p> <p>4.3 Complete documentation and archive spatial data according to project and organisational requirements.</p> |

Foundation Skills

Candidates require:

- planning and organising skills to:
 - plan and prioritise work to meet schedules
- numeracy skills to:
 - conduct precise measurements and calculations relating to height, depth, dimension, direction and position in actual operational activity and virtual representation
- oral communication skills to:
 - negotiate to achieve client requirements
- reading skills to:
 - analyse graphical and technical information in specifications
- writing skills to:
 - record technical information in organisational documentation
- technology skills to:
 - calibrate and program specialised surveying instruments
- problem-solving skills to:
 - identify and resolve areas of potential non-compliance of operations with pertinent legislation, regulations and standards.

Unit Mapping Information

Supersedes and is equivalent to CPPSIS6034 Conduct mining geology operations

[Links](#)

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSUR6034 Conduct mining geology operations

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Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:
conducting mining geology operations for two different projects.

While conducting the above mining geology operations, the candidate must:

- assess the environment to recognise geological aspects of possible ore deposits
- analyse mining geology to report on:
 - geological aspects of possible ore deposits
 - rock types and structures
 - levels of rock stability and ground support
 - ore and minerals fundamental to mining operations
 - methods for obtaining ore and mineral samples
- communicate clearly with clients and others to clarify and report project information
- comply with organisational policies and procedures, standards, mining regulations and legislation when planning and implementing project activities
- evaluate mining geology projects for compliance with specifications and identify non-conformances
- measure geological survey components using two of the following pieces of equipment:
 - current meter
 - echo sounder
 - global navigation satellite system (GNSS)
 - level
 - remote sensing
 - tape
 - total station
- perform calculations to measure, reduce and validate spatial data captured from surveying tasks
- plan and implement project management mechanisms to ensure the project is completed within required timeframes and complies with specifications and standards
- plan and implement risk and contingency management strategies
- use computers and relevant software applications to manipulate spatial data and develop reports
- work safely, using personal protective equipment (PPE) when performing surveying tasks.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- accuracy and precision requirements for mining geology surveying operations
- basic characteristics of common ore and mineral deposits

- classification of economic mineral deposits and the process involved in presenting a schematic model
- data capture and set-out techniques
- data reduction and manipulation techniques
- methods for assessing the environment to recognise ore deposits
- methods for obtaining ore and mineral samples
- mineral exploration methods, including geophysical, geochemical and geological techniques
- mining methods for metalliferous and coal mines
- organisational policies and procedures, standards, regulations and legislation relating to:
- client and stakeholder communication
- mining industry and mine design, including:
 - mine access
 - layout
 - service provision, such as water, air, power, lighting and dewatering
 - mines safety
 - records and reporting
 - risk and contingency management
 - using the equipment specified in the performance evidence
- phases and stages of exploration procedures and possible methods of exploration relevant to each
- physical and chemical characteristics of rock types and structures fundamental to mining operations
- project management techniques for scheduling, measuring and monitoring work progress and planning for risks and contingencies
- techniques for providing rock stability and ground support relating to underground mining.
- appropriate persons:
 - client
 - colleague
 - engineer
 - manager
 - registered or qualified surveyor
 - supplier
- environmental considerations:
 - chemical leakage
 - coal fire
 - erosion
 - loss of biodiversity
 - sinkhole formation
 - soil, groundwater and surface water contamination.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- equipment:
 - as specified in the performance evidence, including PPE
- specifications:
 - mining and surveying specifications, including relevant plans and drawings
 - organisational policies, procedures and documentation relating to work health and safety
 - relevant legislation and regulations relating to mines safety
- relationships with team members and supervisor:
 - lead role in a team.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>