



Australian Government

CPPSSI6021 Conduct open pit mine surveys

Release: 1

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Modification History

Release 1 This version first released with CPP Property Services Training Package Release 12.0.

This unit supersedes and is equivalent to CPPSIS6021 Conduct open pit mine surveys.

Application

This unit specifies the skills and knowledge required to survey open pit mining operations. It includes using specialist equipment to measure identified components of an open pit mine; capturing and reducing data; creating mine drawings; and complying with standards, legislation and regulations applicable to the mining industry.

This unit is suitable for surveyors who use broad theoretical and technical knowledge to analyse information as well as interpret and provide solutions to unpredictable and sometimes complex surveying/spatial information problems. The unit supports those who work in a mine surveyor role in an open pit mine environment.

All work must be carried out to comply with workplace procedures, in accordance with relevant state/territory regulations that govern surveying work, as well as work health and safety (WHS) legislation and regulations that apply to the workplace.

Cadastral surveying must be undertaken under the supervision of a registered surveyor. Users must check with the relevant regulatory state/territory authority before delivery.

Licensing, legislative or certification requirements apply to this unit in some states/territories 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.

Pre-requisite Unit

Nil.

Unit Sector

Surveying and Spatial Information Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare for open pit mine survey. | 1.1 Consult appropriate persons and plans to identify open pit mine survey objectives, specifications and constraints. |
| | 1.2 Comply with legislative requirements and industry standards applicable to open pit mining. |
| | 1.3 Identify hazards, assess risks of work activities and implement control measures. |
| | 1.4 Liaise and collaborate with relevant persons on site according to project requirements. |
| | 1.5 Plan survey procedures to support mineral extraction in mine. |
| | 1.6 Check mine workings and activities comply with legal boundaries. |
| 2 Carry out open pit mine surveying tasks. | 2.1 Apply WHS requirements when performing surface mine surveying tasks. |
| | 2.2 Measure and set out identified spatial components of open pit mine according to project requirements. |
| | 2.3 Reduce measured spatial data for comparison with mine design. |
| | 2.4 Create mine drawings as required. |
| | 2.5 Use captured data to calculate mine volumes according to project requirements. |
| | 2.6 Record and validate measurements according to project requirements. |
| | 2.7 Resolve problems and implement contingencies according to project requirements. |
| 3 Report open pit mine survey outcomes. | 3.1 Finalise survey activities and confirm that contractual and legislative requirements are met. |
| | 3.2 Notify appropriate persons of survey results according to organisational requirements. |
| | 3.3 Complete documentation and store spatial data according to project and organisational requirements. |

Foundation Skills

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

Unit Mapping Information

Supersedes and is equivalent to CPPSIS6021 Conduct open pit mine surveys.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSSI6021 Conduct open pit mine surveys

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Performance Evidence

To demonstrate competency a candidate must meet the elements and performance criteria of this unit by conducting two different projects relevant to open pit mine surveys that include:

- control re-establishment
- set-out of positions for blast holes
- detail/contour survey for water run-off purposes
- calculation of stockpile volumes
- measure of wall faces.

Two of the following pieces of surveying equipment must be used:

- global navigation satellite system (GNSS)
- remote sensing
- laser scanner
- unmanned aerial vehicle (UAV)
- sonar
- total station.

Knowledge Evidence

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

- legislation and regulations relevant to surface mine safety
- terminology applicable to surface mining
- mineral exploration methods, including geophysical, geochemical and geological techniques
- terminology used in relation to common mineral deposits
- operations involved in open pit mining:
 - developing roads and ramps
 - drilling
 - removing interburden

- pre-stripping
- stockpiles, dumps and safety berms
- tailings dams
- types of survey activities associated with open pit mines
- techniques for wall monitoring:
 - required prism locations
 - toe, crest and batter checks
 - scanning technology
- types of explosives and blasting practices applicable to surface mining operations
- functions and use of specialised surveying equipment
- accuracy and precision requirements for surveying data
- technical information in mining plans
- calculations relating to height, depth, dimension, direction, position and volumes.

Assessment Conditions

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

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting where these skills and knowledge would be performed.

Candidates must have access to:

- personal protective equipment (PPE)
- relevant mines safety legislation and regulations for the jurisdiction
- surveying specifications, including relevant plans and drawings.

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