



Australian Government

MSL975051 Supervise geotechnical site investigations

Release: 1

MSL975051 Supervise geotechnical site investigations

Modification History

Release	Comments
Release 1	This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>. Supersedes and equivalent to MSL975023 Supervise geotechnical site investigations. Changes to performance criteria. Range of conditions removed. Assessment requirements amended. Equivalent outcome.

Application

This unit of competency describes the skills and knowledge to supervise and direct geotechnical site investigations based on observation and testing. The unit involves confirming the scope of the investigation, liaising with site personnel and coordinating geotechnical sampling and testing activities, collecting reliable data and reporting results. Personnel are also expected to interpret results in the field, provide reliable advice to clients, recognise and rectify obvious errors or unexpected results and troubleshoot common problems.

This unit applies to technical officers working in the construction materials testing sector. This unit of competency is typically performed by experienced technicians or engineering paraprofessionals, who often supervise, or direct less experienced technical personnel.

No licensing or certification requirements exist at the time of publication. However, regulations and/or external accreditation requirements for laboratory operations exist, so local requirements should be checked. Relevant legislation, industry standards and codes of practice within Australia must also be applied.

Pre-requisite Unit

MSL974018 Conduct geotechnical site investigations

Competency Field

Testing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|---|-----|--|
| 1 | Plan geotechnical investigation | 1.1 | Identify the job, consult with stakeholders and obtain relevant information, including the purpose and scope of the investigation |
| | | 1.2 | Conduct desktop study of existing site information |
| | | 1.3 | Inspect the site to determine the characteristics of the project |
| | | 1.4 | Design inspection, sampling and testing program in accordance with specifications |
| | | 1.5 | Select human and physical resources required for the job |
| | | 1.6 | Conduct risk assessment and control risk |
| | | 1.7 | Brief support personnel on job-specific requirements |
| | | 1.8 | Ensure ongoing liaison with stakeholders during project |
| | | | |
| 2 | Establish on-site operations | 2.1 | Consult with project personnel to determine methods of communication, roles, responsibilities and expectations of each party, including identification of potential problems and conflicts |
| | | 2.2 | Arrange deployment of personnel and resources to site |
| | | 2.3 | Arrange for the physical location of services, as required, and reconcile test locations |
| | | | |
| 3 | Coordinate geotechnical sampling and testing | 3.1 | Ensure sampling and testing is conducted in accordance with project requirements |
| | | 3.2 | Ensure test data and observations are recorded in accordance with workplace practices |
| | | 3.3 | Review the progress of sampling and testing against the project schedule and provide any feedback to client |
| | | 3.4 | Review samples and field data and schedule testing |

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
		3.5	Ensure the finalisation of site operations according to project brief or relevant standard
4	Analyse project data and report to client	4.1	Report test results to site superintendent at specified intervals
		4.2	Analyse project data and provide regular reports to the client using the agreed format
5	Maintain workplace records	5.1	Record entries on report forms or into a laboratory information management system accurately calculating, recording or transcribing data as required
		5.2	Ensure traceability of sample from receipt to reporting of results
6	Promote a safe work environment	6.1	Promote the use of safe work procedures and personal protective equipment (PPE)
		6.2	Minimise environmental impacts of testing/sampling and generation of waste
		6.3	Promote the collection and disposal of all waste in accordance with workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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

Unit Mapping Information

Equivalent to MSL975023 Supervise geotechnical site investigations, Release 1.

Links

Training Package Companion Volumes -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

Assessment Requirements for MSL975051 Supervise geotechnical site investigations

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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:

- effectively supervised and directed at least 2 geotechnical site investigations.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- purposes and principles of geotechnical site investigations supervised and directed as part of job role
- principles of planning and project management
- identification and classification of materials
- engineering properties of soil and rock materials
- representative sampling and testing methods (both in situ and laboratory) conducted as part of geotechnical site investigations relevant to job role
- uses of engineering materials in civil construction
- civil construction techniques relevant to job role
- common site problems:
 - caving in of excavation walls
 - drilling difficulties
 - not knowing the requirements of the design engineer
 - not understanding the nature of the item being designed (e.g. retaining wall, piled structure and earthworks)
 - sample loss during retrieval
 - knowing when to stop a hole, or what and when to test and sample
 - misidentification of samples and sampling locations

- equipment breakdown and breakage
- environmental problems and issues, including site access, inclement weather, traffic, wildlife, vegetation and construction activities
- principles and purpose of test methods implemented (why they are used and what they demonstrate)
- technological advances that include automation
- awareness of environmental sustainability issues as they relate to the work task
- legal, ethical and work health and safety (WHS) requirements specific to the work task including traceability, confidentiality and security requirements of all client information, and laboratory data and records.

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 suitable facilities, equipment and resources, including:
 - access to geotechnical sites and relevant site documentation
 - workplace procedures, site plans, sampling and test methods/programs and equipment manuals
 - consumables; hand tools; field sampling and test equipment, such as dynamic cone penetration (DCP) testing, standard penetration testing (SPT), shear vane, pocket penetrometer and water level indicator, and sand replacement apparatus
 - levelling equipment (dumpy and automatic levels)
 - still/video camera, communication equipment
 - excavation equipment, such as hand and power augers, powered excavators, generators and jack hammers
 - safety clothing and equipment, including helmets, boots, gloves, earmuffs and glasses.

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

Links

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