



**Australian Government**

# **MSS025022 Perform sampling and testing of soils**

**Release: 1**

# MSS025022 Perform sampling and testing of soils

## Modification History

Release 1. Updated unit code. Changes to performance criteria. Range of conditions removed. Assessment requirements amended. Equivalent outcome.

## Application

This unit describes the skills and knowledge to collect soil samples in accordance with a defined sampling plan, prepare the samples for testing, conduct in-field and laboratory testing of the samples and report the results. Personnel are required to check the validity and reliability of data, recognise atypical test data, and troubleshoot common test procedures and equipment problems.

This unit applies to environmental technicians in a range of industry sectors, including geotechnical services and civil engineering; site remediation or rehabilitation; solid and hazardous waste management; natural resource management; management of contaminated sites; environmental services (sampling and monitoring of air quality, water and soil); environmental compliance, auditing and inspection; groundwater and clean water (catchments, supply and environmental flows).

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

## Pre-requisite Unit

MSS024020            Recognise common geological landforms and samples

## Competency Field

Sampling and testing

## Unit Sector

Environmental

## Elements and Performance Criteria

Elements describe the essential outcomes.

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

- |   |  |     |  |
|---|--|-----|--|
| 1 | <b>Confirm soil sampling and testing</b> | 1.1 | Read and interpret available site information, site plan, sampling and testing locations and history of sampling and testing |
|---|--|-----|--|

<p>Elements describe the essential outcomes.</p> <p><b>requirements with supervisor</b></p>	<p>Performance criteria describe the performance needed to demonstrate achievement of the element.</p> <p>1.2 Confirm the sampling locations, numbers and types of samples, timing and frequency of sampling from workplace or client's sampling plan</p> <p>1.3 Check that all sampling and testing procedures are in accordance with client or workplace requirements, standards and guidelines</p>
<p>2 <b>Prepare for soil sampling</b></p>	<p>2.1 Identify site and sampling hazards and review workplace safety procedures</p> <p>2.2 Liaise with relevant personnel to arrange site access and obtain all clearances and permits</p> <p>2.3 Select sampling equipment and conditions to achieve representative samples and to preserve sample integrity during collection, storage and transit</p> <p>2.4 Select field test equipment and instruments and check operation and calibration in accordance with procedures and manufacturer instructions</p> <p>2.5 Assemble and check all sampling equipment, field test equipment, materials, containers and safety equipment</p> <p>2.6 Arrange suitable transport to, from and around site</p>
<p>3 <b>Conduct sampling and log soil samples</b></p>	<p>3.1 Locate sampling points and any services at the site</p> <p>3.2 Work effectively with other site personnel during drilling and excavation operations to collect and log reliable samples</p> <p>3.3 Conduct representative sampling in accordance with sampling plan and defined procedures for field and laboratory testing</p> <p>3.4 Record all information and label samples in accordance with traceability requirements</p> <p>3.5 Record environment and any conditions or atypical observations made during sampling that may impact on</p>

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.
		sample representativeness or integrity
		3.6 Transport all samples back to base according to workplace procedures and codes
4	<b>Prepare soil samples for testing</b>	4.1 Prepare sub-samples and back-up sub-samples that are representative of the source
		4.2 Label all sub-samples to ensure traceability and store in accordance with workplace procedures
		4.3 Follow defined preparation and safety procedures to limit hazards or contamination to samples, self, work area and environment
		4.4 Distribute sub-samples to required destinations for testing, maintaining sample integrity, traceability and chain of custody requirements
5	<b>Conduct physical and chemical soil tests in the field</b>	5.1 Obtain sample or sub-sample for designated field test
		5.2 Check that all equipment, instruments and reagents are fit for purpose
		5.3 Set up and calibrate instruments to ensure safe operation and valid results
		5.4 Operate equipment and instruments in accordance with test method requirements
		5.5 Perform tests, procedures and observations on all samples and standards in accordance with specified methods
		5.6 Record all field observations and results and ensure that they are accurately transferred to workplace information management system
6	<b>Conduct physical and chemical soil</b>	6.1 Obtain sample or sub-sample for designated laboratory test

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.
<b>tests in the laboratory</b>	6.2	Check that all equipment, instruments and reagents are fit for purpose
	6.3	Set up and calibrate instruments to ensure safe operation and valid results
	6.4	Operate equipment and instruments in accordance with test method requirements
	6.5	Perform tests and procedures on all samples, blanks and standards in accordance with specified methods
	6.6	Record test data noting atypical observations
	6.7	Process the data for samples, standards and blanks in accordance with workplace procedures
	6.8	Enter approved information into workplace information management system
7		<b>Review results and assess soil suitability for specific purposes</b>
	7.1	Read and interpret results in relation to legislative and client requirements
	7.2	Compare data with required, established and desired parameters to establish suitability for purpose
	7.3	Determine need for remedial action and report to client
8		<b>Maintain a safe work environment</b>
	8.1	Rehabilitate sampling site to render it safe and to minimise environmental impact
	8.2	Clean all equipment, containers, work area and vehicles according to workplace procedures
	8.3	Check serviceability of all equipment before storage
	8.4	Use defined safe work practices and personal protective equipment (PPE) to ensure personal safety and that of others
	8.5	Minimise the generation of wastes and environment impacts

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

8.6 Ensure the safe collection of all hazardous wastes for disposal

## 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

Release 1. Supersedes and is equivalent to MSS025007 Perform sampling and testing of soils.

## Links

The MSS Sustainability Companion Volume implementation Guides are available from VETNet: -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>