



Australian Government

MSL972001 Conduct routine site measurements

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSL972001A Conduct routine site measurements

Application

This unit of competency covers the ability to make direct measurements using workplace procedures. Measurements will be straightforward and involve a minimal number of steps, take a short time, have easily recognised control limits and use equipment calibrated by others. Measurements include the use of instruments and/or kits.

This unit of competency is applicable to production operators, field assistants and laboratory assistants in manufacturing, construction materials and environmental services industry sectors.

While no specific licensing or certification requirements apply to this unit at the time of publication, laboratory operations are governed by relevant legislation, regulations and/or external accreditation requirements. Local requirements should be checked.

Pre-requisite Unit

Nil

Competency Field

Testing

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1	Prepare for measurements	1.1	Confirm the purpose, priority and nature of measurements required
		1.2	Liaise with relevant personnel to arrange site access and all necessary clearances/permits
		1.3	Identify site hazards and review workplace safety procedures
		1.4	Assemble all measuring and safety equipment and check they are fit for purpose

- 1.5 Check all equipment/materials against a given inventory and stow them to ensure safe transport
 - 1.6 Arrange appropriate transport for site access as required
- 2 **Perform measurements**
 - 2.1 Locate measurement points and services at the site
 - 2.2 Gain access to measurement points by removing covers and locks as appropriate
 - 2.3 Seek advice if the required measurements cannot be made or if procedures require modification
 - 2.4 Operate measuring equipment in accordance with workplace procedures and manufacturer instructions
 - 2.5 Take sufficient readings to ensure reliable data
 - 2.6 Record data with appropriate accuracy, precision and units
 - 2.7 Record environmental/site conditions and any other observations that may impact on data quality
 - 2.8 Recognise obvious errors/atypical data and take appropriate corrective action
 - 2.9 Secure measuring points by replacing covers and locking as appropriate
- 3 **Finalise measurements**
 - 3.1 Follow workplace procedures for the cleaning/decontamination of equipment and vehicle as necessary
 - 3.2 Check all equipment and materials against inventory and stow for safe transport
 - 3.3 Liaise with relevant personnel to restore normal production and/or services as necessary
 - 3.4 Report all measurements in accordance with workplace procedures
 - 3.5 On return, check and document serviceability of equipment before storage

4	Maintain a safe work environment	4.1	Use established work practices and personal protective equipment (PPE) to ensure personal safety and that of others
		4.2	Minimise environmental impacts of measurements and generation of waste
		4.3	Dispose 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.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Standards, codes, procedures and/or workplace requirements

Standards, codes, procedures and/or workplace requirements include the latest version of one or more of:

- Australian and international standards covering the requirements for the competence of testing and calibration laboratories, laboratory safety, quality management and environmental management
- national work health and safety (WHS) standards and codes of practice, national environmental protection measures, and national measurement regulations and guidelines
- specific codes, guidelines and procedures, such as National Association of Testing Authorities (NATA) accreditation requirements and principles of good laboratory practice (GLP)
- workplace documents, such as standard operating procedures (SOPs); quality and equipment manuals; calibration and maintenance schedules; material safety data sheets (MSDS); safety procedures; material, production and product specifications; production and laboratory schedules; workplace recording and reporting procedures; waste minimisation and safe disposal procedures; and maps and site plans

- measurement procedures for specific sites and clients

Direct measurements Direct measurements role include, but are not limited to, one or more of:

- basic production/process parameters (e.g. flow, temperature, pressure, mass and depth, and dimensions)
- simple surveys (e.g. number of trees in quadrant)
- meteorological measurements (e.g. temperature, rainfall and wind)
- sound (e.g. dB level and dBA)
- light levels and illumination
- background radiation (e.g. Geiger counter)
- chemical tests using simple instruments and/or kits to test pH, specific ions, such as iron in water using dipsticks, dissolved oxygen (DO) and electrical conductivity (EC)

Measuring equipment

Measuring equipment includes, but is not limited to, one or more of:

- tape measures, rulers, micrometers, Vernier callipers and water level indicators
- balances
- meter/probe systems, such as DO and EC
- analogue and digital meters, such as voltage, current, resistance, pressure, temperature, barometers, anemometers and hygrometers
- dipsticks and spot test kits
- clocks and timing devices

Services

Services include one or more of:

- water supply, gas and electricity
- telecommunications
- irrigation, stormwater and drainage systems
- production plant

Safety procedures

Safety procedures include, but are not limited to, one or more of:

- use of PPE
- handling, labelling and storing hazardous material and equipment in accordance with labels, MSDS, manufacturer instructions, and workplace procedures and regulations
- regular cleaning and/or decontamination of equipment
- use of machinery guards

- signage, barriers, service isolation tags, traffic control and flashing lights, and lockout and tag out procedures

Minimising environmental impacts

Minimising environmental impacts includes, but is not limited to, one or more of:

- appropriate disposal of surplus, spent or purged materials and hazardous waste
- recycling of non-hazardous wastes
- driving vehicles to minimise soil erosion and damage to fauna and vegetation
- cleaning of vehicles and equipment to prevent transfer of pests and contaminants

WHS and environmental management requirements

WHS and environmental management requirements include:

- complying with WHS and environmental management requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time
- applying standard precautions relating to the potentially hazardous nature of samples
- accessing and applying current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health, where relevant

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MSL972001 Conduct routine site measurements

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Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- safely making a variety of direct measurements at different sites on at least three (3) occasions
- liaising with others to access sites and perform measurements efficiently
- correctly locating measurement points and services at sites
- making measurements to minimise environmental impact and/or disruption to normal site operations
- safely operating instruments and test kits in accordance with workplace procedures and manufacturer instructions
- reading scales/displays accurately and taking sufficient measurements to ensure reliable data
- recording data that is legible, free of errors and has appropriate accuracy, precision and units
- recognising obvious errors/atypical data and using corrective actions, including:
 - logical check of equipment set-up
 - check of calibration, zero error and drift for basic instruments
 - careful re-reading of procedures
 - repeating measurements
 - seeking advice
- maintaining confidentiality and reporting problems and incidents in accordance with procedures
- following workplace procedures for safely conducting site measurements; recording and reporting data and any relevant legal traceability requirements; and maintenance, storage and transport of measurement equipment
- recognising own limitations and seeking timely advice.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- concepts of metrology, including:
 - all measurements are estimates
 - measurements belong to a population of measurements of the measured parameters

- precision, accuracy and significant figures
- sources of error, uncertainty and repeatability
- traceability
- international system of units (SI)
- purpose of measurements performed as part of job role and the principles of operation for the equipment/instruments used
- sources of uncertainty in measurement and methods for control
- workplace safety procedures associated with measurements undertaken as part of job role; the maintenance, storage and transport of measurement equipment; waste management and handling of dangerous goods
- workplace and/or legal traceability requirements
- procedures for recognising and reporting of unexpected or unusual results
- relevant hazards, work health safety (WHS) and environment requirements.

Assessment Conditions

- Judgement of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.
- This unit of competency is to be assessed in the workplace or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with:
 - MSL952001 Collect routine site samples
- Holistic assessment methods include:
 - review of the quality of site measurement data and documentation provided by the candidate
 - observation of the candidate performing a range of site measurements
 - feedback from supervisors and clients that relevant procedures were followed and that measurements were conducted in an efficient manner
 - oral/written questioning about workplace procedures for conducting site measurements; maintenance, storage and transport of measurement equipment; waste management and handling of dangerous goods.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:

- a variety of sites and relevant measuring equipment
- safe operating procedures for equipment, site measurement procedures and documented safe work practices.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competence and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience.
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with a laboratory about performing the competency being assessed within the last twelve months.

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